# The Gazette



# of Kndia

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## NEW DELHI, SATURDAY, MAY 26, 1951

## NOTICE

The undermentioned Gazettes of India Extraordinary were published during the week ending the 23rd May 1951:--

Issue No.	No. and date	Issued by	Subject
36	No. 92-ITC(P.N.)/51, dated 15th May, 1951.	Ministry of Commerce and Industry.	Licensing policy re Ring frames, spares therefor and Carding Engines required by Cotton Textile Industry for January—June 1951.
37	No. 32(1)-T.B./51, dated 18th May. 1951.	Ditto.	Report of the Tariff Board on the claim of the Caustic Soda and Bleaching Powder Industry for assistance or protection.
	No. 7(8)-P.C./50, dated 18th May, 1951.	Ditto.	Maximum price of the indigenous Caustic Soda.
	No. 18-I.T.C./51, dated 17th May, 1951.	Ditto.	Further amendment in Open General Licence No. XXI.
38	No. 96-I.T.C. (P.N.)/51, dated 21st May, 1951.	Ditto.	Hours of interviews with officers in the office of Chief Controller of Imports.

Copies of the Gazettes Extraordinary mentioned above will be supplied on indent to the Manager of Publications, Civil Lines, Delhi. Indents should be submitted so as to reach the Manager within ten days of the date of issue of this Gazette.

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#### PART I—Section 1

Notifications relating to Non-Statutory Rules, Regulations and Orders and Resolutions issued by the Ministries of the Government of India (other than the Ministry of Defence) and by the Supreme Court

## MINISTRY OF COMMERCE AND INDUSTRY

PUBLIC NOTICES

IMPORT TRADE CONTROL

New Delhi, the 16th May 1951

Subject: —Licensing of imports of Motors below 30 H.P. when they are imported as an integral part of the machinery.

No. 93-ITC(P.N.)/51.—The attention of importers is invited to Public Notice No. 23-ITC(P.N.)/51, dated the 2nd February 1951, laying down the licensing policy in the case of Motors below 30 H.P., when they are imported as an integral part of machinery.

2. It has now been decided that the certificate prescribed in paragraphs 2 and 3 of the said Public Notice should, in the case of such Motors when imported with Cotton Textile Machinery falling under Part III of the Import Trade Control Schedule, be obtained from the Textile Advisory Committee No. 3, Office of the Textile Commissioner, Bombay.

IMPORT TRADE CONTROL

New Delhi, the 21st May 1951

Subject: —Licensing of woollen piecegoods of 14 oz. or less per square yard to tailoring establishments during January—June 1951.

No. 95-ITC(P.N.)/51.—The attention of the importers is invited to the entries against Serial Nos. 186(a) and 187(a) of Part IV in Appendix 'C' to the late Commerce Ministry's Public Notice No. 150-ITC(P.N.)/50, dated the 15th December 1950 and the Public Notice No. 28-ITC(P.N.)/51, dated the 14th February 1951.

New Delhi, the 17th May 1951

Subject:—Import of alcoholic essences falling under Serial No. 13 of Part V against licences granted for the import of non-alcoholic essences falling under Serial No. 79/IV for July—December 1950.

No. 94-ITC(P.N.)/51.—The attention of importers is invited to the Public Notice No. 67-ITC(P.N.)/51, dated the 29th March 1951, permitting the import of essences containing spirit, used for the manufacture of beverages, falling under Serial No. 13 of Part V against licences issued for the period January—June 1951 for the import of non-alcoholic essences falling under Serial No. 79 of Part IV. It has now been decided that similar licences for the period July—December 1950 will also be valid for import of these alcoholic licences in the manner laid down in para. 2 of Public Notice No. 67-ITC(P.N.)/51, dated the 29th March 1951.

L. K. JHA, Chief Controller of Imports.

2. It has been decided that though established importers, who apart from being engaged in the import trade were maintaining their own tailoring establishments and selling woollen garments manufactured or tailored from the woolen piecegoods which they imported should receive some extra weightage in future import licensing. While the extent to which extra facilities can be given to importers falling in this class has not yet been finally decided, all importers who wish to avail of this concession should send in a statement as in Annexure A of this Public Notice duly certified by their chartered accountants to the Chief Controller of Imports, New Delhi, so as to reach this office not later than 25th June 1951.

## ANNEXURE A

## Form of Auditor's Certificate

Statement furnishing particulars required in Public Notice No. 98-ITC (PN)/51, for additional licences for import of woollen fabrics to be used by importors having "tailoring" establishments elso.

Year			Gross annual sales of tailored woollen garments	Quantities of (imported as well as indigenous) materials used in the applicant's establishment		
χ ear				Woollen	Cotton	
1	2	3	4	5	6	
1946-47 1947-48 1948-49 1940-50 1950-51	Rs.	No.	Rn.	Qty.	Qty.	

I solemnly declare the above statement to be true and correct to the best of my knowledge.

Signature	of the	Proprietor	/Director	/Partner	/Manager	Or	Mesers.
~-6	O- VIIO	TYOPIACOU	TOTAL	1 = 0 = 0 = 0 =	Throughou .	OI.	THE COURT D

Certificate	Λŧ	Auditor

Signature of the Chartered Accountant
Mombership Noof year
Plane Date

E. J. BENJAMIN, Chief Controller of Imports.

## MINISTRY OF FOOD AND AGRICULTURE

#### AGRICULTURE

New Delhi, the 16th May 1951

No. F.4-15/51-CJ.—Under Rule 1(10) of the Rules and Regulations of the Indian Central Jute Committee Shri L. P. Goenka of Messrs. Ramdutt Ramkissendas of 4 Clive Ghat Street, Calcutta, has been nominated by the Indian Chamber of Commerce to be a member of the Indian Central Jute Committee with effect from the 1st May 1951, vice Shri Bhagirath Kamoria.

No. F.4-15/51-CJ.—Under Rule 1(7) of the Rules and Regulations of the Indian Central Jute Committee Mr. A. C. Lloyd of Messrs. Macniel & Barry Ltd., 2, Fairlie Place, Calcutta, has been nominated by the Indian Jute Mills Association to be a member of the Indian Central Jute Committee with effect from 2nd May 1951, vice Mr. F. H. Kidd, resigned.

Under Rule 1(7) of the Rules and Regulations of the Indian Central Jute Committee Mr. I. G. Kennedy, C.B.E. of Messrs. Jardine Henderson of 4, Clive Row, Calcutta, has been re-nominated by the Indian Jute Mills Association to be a member of the Indian Central Jute Committee with effect from 22nd June 1951.

New Delhi, the 19th May 1951

No. F.4-15/51-CJ.—Under Rule 1(18) of the Rules and Regulations of the Indian Central Jute Committee Shri John A. Manawwar, M.A., B.Sc. (Edin.), M.S.A. (Texas), Joint Director of Agriculture, Uttar Pradesh, has been renominated by the Government of Uttar Pradesh to be a member of the Indian Central Jute Committee with effect from the 1st March 1951.

P. M. DAS GUPTA, Dy. Secy.

## RESOLUTION

New Delhi, the 16th May 1951

No. F.1-18/51-Com.I.—The Government of India have decided that the Chairman and the Vice-Chairman of the Indian Council of Agricultural Research mentioned in the late Education Health and Lands Department Resolution No. 826-Agri., dated the 23rd May 1929, shall henceforth be called the President and the Vice-President of the Council respectively as resolved by the Council at a Special General Meeting held on the 1st November 1950.

N. T. MONE, Joint Secy.

## MINISTRY OF EDUCATION

New Delhi, the 17th May 1951

Corrigendum to the Scheme for the Administration and Management of the Properties and Funds of the Indian Institute of Science, Bangalore, published under the Ministry of Education Notification No. F. 8-17/49-T.1, dated the 27th February 1951.

No. F.8-17/49-T.1.—(i) Substitute the word 'Organisation' for the word 'Federation' occurring in subclause (vil) of clause 11 of the Scheme.

(ii) Add the following after clause 14 of the Scheme:—

"Members of the staff of the Institute other than the Director and Deans of Faculties shall not be eligible for membership of the Council."

G. K. CHANDIRAMANI, Dy. Secy.

## MINISTRY OF RAILWAYS (Railway Board)

New Delhi, the 15th April 1951

No. E50RR7.—The following Rules and Regulations for recruitment to the Mechanical Engineering and Transportation (Power) Department of the Superior Revenue Establishment of Indian Railways are published for general information:—

## RULES

## PART I-GENERAL

## Method of Recruitment

1. These Rules may be called the Mechanical Engineering and Transportation (Power) Department of the Superior Revenue Establishment of Indian Railways Recruitment Rules.

- 2 For the purpose of these Rules-
  - (a) "Government" means the Government of India;
  - (b) "The Commission" means the Union Public Service Commission;
  - (c) "The Service" means service in the Mechanical Engineering and Transportation (Power)
    Department of the Superior Revenue
    Establishment of Indian Railways.
  - (d) "Scheduled Castes" means any of the castes mentioned in Appendix III.
  - (e) "Scheduled Tribes" means any of the tribes mentioned in Appendix III-A.
- 3. The Service shall be recruited by the following methods:—
  - (1) By appointment of candidates as Special Class Apprentices on the results of a Selection to be made in India in accordance with Part II of these Rules.
  - (2) By competitive examination held in India in accordance with Part III of these Rules.
  - (3) By promotion of specially qualified officers of the Class II service, including officiating officers, in the Mechanical Engineering and Transportation (Power) Department.
  - (4) By occasional admission of other qualified persons appointed by the President in consultation with the Commission.

Note.—Candidates selected as Special Class Apprentices under Rule 3(1) shall be required to undergo practical and theoretical training. For the periods and courses of training and terms and conditions of apprenticeship see Appendix IV.

- 4. Subject to the provisions of rule 3, Government shall determine the method or methods to be employed for the purpose of filling any particular vacancies, or such vacancies as may require to be filled during any particular period, and the number of candidates to be recruited by each method.
- 5. Appointments to the Service made otherwise than by promotion will be subject to orders issued from time to time by the Ministry of Home Affairs regarding special representation in the Services for specific sections of the people.

## Part II

Qualifications of candidates and methods of selection

Special Class Apprentices recruited under
2 3(1).

o. A candidate must be either-

- (i) a citizen of India, or
- (ii) a person who has migrated from Pakistan with the intention of permanently settling in India; or
- (iii) a subject of Nepal or of Sikkim or of a Portuguese or French possession in India.

Note 1.—If a candidate belongs to category (ii) or (iii) above, he/she must be a person in whose favour a certificate of eligibility has been granted by the Government of India. A candidate in whose favour such a certificate is necessary may however selection be provisionally appointed subject to the necessary certificate being eventually given to him/her by the Government.

Note 2.—Fersons who migrated to India from Pakistan before 19th July 1948 and have been ordinarily resident in India since then are eligible for appointment to services and posts under the Government of India without certificates of eligibility qua citizens of India. Persons who so migrated on or after the 19th July 1948 are non-citizens and must secure certificate of eligibility for appointment to Union Services, unless they had migrated before 30th September, 1948 and had got themselves registered as citizens within the time allowed or had entered the Union Services without certificates of eligibility under the old instructions in which case certificates of eligibility will not be necessary.

- 7. A candidate must be in good mental and bodily health and free from any physical defect likely to interfere with the efficient performance of his/her duties as an officer of the Service. A candidate who is found after examination by a Medical Board not to satisfy these requirements will not be appointed. Only those candidates who are likely to be appointed will be medically examined.\*
- 8. A candidate must have attained the age of 16 years and must not have attained the age of 19 years on the third day of August immediately preceding the Selection and
  - (a) must have passed in the first or second Division the Intermediate Examination of a University or Board approved by the Government of India with Mathematics. Physics and Chemistry or with Mathematics and at least one of the subjects Physics and Chemistry, as subjects of the examination;

N.B.—This condition will be enforced in the case of graduates also irrespective of the subjects taken by them for their degree examination.

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- (b) must have passed the Pre-engineering
  Examination of Delhi Polytechnic in the
  first or second Division; or
- (c) must have passed the first year Examination under the three year Degree Course of the Delhi University with Mathematics and at least one of the subjects Physics and Chemistry as subjects of the examination and must have been promoted to the second year, provided that, before joining the Degree Course, he had passed the Higher Secondary Examination or the Matriculation or High School Examination in the first or second Division, or
- (d) must have obtained the Cambridge School Certificate (A) with at least 5 credits including credits in Mathematics, Physics and Chemistry or in Mathematics and at least one of the subjects Physics and Chemistry; or
- (e) must have passed the London Matriculation Examination with a pass in Mathematics, Physics and Chemistry or in Mathematics and at least one of the subjects Physics and Chemistry.
- Note 1.—The upper age limit will be relaxable
  - up to a maximum of three years if a candidate belongs to a scheduled caste or a scheduled tribe or is a bona fide displaced person from Pakistan;
  - (ii) up to a maximum of six years if a ca\_\_\_\_ate belongs to a scheduled caste or a scheduled tribe and is also a bona fide displaced person from Pakistan;
  - (iii) up to the age of 35 years on the date of commencement of the Selection in the case of a candidate who took part in national movements and who fulfils the conditions laid down in Appendix IV-A to the Rules.
- N.B.—Save as provided above the age limits prescribed can in no case be relaxed.

Note 2.—A candidate who has secured a Cambridge School Certificate (B) and who has satisfied the conditions in (d) above will be eligible for admission to the Selection provided that he/she produces a certificate from the Head of an institution approved for the purpose of the award of School Certificate (A) stating that he/she actually took the examination from that school and had been in attendance at an approved school or schools for a continuous period of three years immediately prior to the School Certificate Examination.

9. A candidate must satisfy the Commission that he/she is suitable in all respects for employment in the Railway Services.

- to. A candidate must submit his/her application to the Commission in such manner, before such date, and in such form as the Commission may direct.
- 11. No candidate shall make more than one application for each selection,
- 12. No recommendations except those invited in the Form of Application will be taken into consideration. Any attempt on the part of a candidate to obtain support for his/her candidature by other means may disqualify him/her for appointment.
  - 13. Candidates must pay the following fees:-
- (i) To the Commission—Rs. 7-8-0 (Rs. 1-14-0 in the case of candidates belong to Scheduled Castes or Scheduled Tribes) with the application form.
- (Only a treasury receipt or crossed Indian postal order(s) for this amount will be accepted by the Commission

  The Commission cannot accept the fee in cash or by cheque).

Nore.—The Commission may at their discretion remit the prescribed fee where they are satisfied that the applicant is a bona fide displaced person from Pakistan and is not in a position to pay the prescribed fee.

(ii) To the General Manager of the Railway which arranges for the Medical examination—Rs. 16 before examination by a Medical Board, if selected for appointment.

No claim for a refund of these fees will be entertained, nor will they be held in reserve for any other examination or selection.

- 14. The Commission shall ordinarily interview all candidates who satisfy the above requirements but they may at their discretion subject all candidates to a simple qualifying Intelligence Test and interview only those candidates who qualify at this test.
- 15. Candidates who are to be interviewed will be summoned by the Commission. Unless a candidate has been so summoned he/she will not be interviewed.
- 16. The Commission shall prepare a list of selected candidates in order of merit provided the candidates are in the opinion of the Commission suitable for appointment as Special Class Apprentices. Vacancies shall be filled in strict order of merit from the list prepared by the Commission subject to the orders issued from time to time by the Ministry of Home Affairs regarding special representation for specific sections of the people provided that the Government of India are satisfied that such candidates are in all respects suitable for employment in the Railway Service.

## PART III

## Recruitment by Competitive Examination

- 17. A competitive examination for admission to the Service shall be held in India at such times and places as Government may prescribe by Notice issued through the Commission. Every such notice will, when possible, announce the number of vacancles to be filled on the result of the examination.
- 18. If the examination held under this part of these Rules is a combined examination for the purpose of making appointments to more than one Service or Department, the following provisions shall apply:—
  - (i) Any person may apply to be admitted as a candidate for appointment in all or any of these Services or Departments for which he /she is eligible. If he/she wishes to compete for appointment in more than one Service or Department, he/she shall state on his/her application form which Services or Departments he/she wishes to compete for and the order of his/her preference between them, and in such case only one application form will be necessary and one payment of the fees referred to in Rule 27 (and Appendix VI) will be sufficient.
  - (ii) Government shall assign successful candidates to each Service or Department on a consideration of all circumstances including any personal preference expressed by the candidate
- 19. The maximum number of candidates to be admitted to any examination may at the discretion of the Commission be limited to such number, not being less than 200, as the Commission may decide. If a limit is imposed and the number of candidates exceeds that limit, the Commission shall select from the applicants those who shall be admitted to the examination, and in doing so thall have regard to the suitability of the applicants.

<sup>\*</sup>In order to prevent disappointment, candidates are ndvised to have themselves examined by a Government Medical Officer of the standing of a Civil Surgeon, before applying for admission to the selection. Particulars of the nature of the physical test to which candidates will be subjected before appointment and of the standards required can be had from the Commission.

- 20. \*(i) A candidate who is in permanent or temporary Government Service shall apply to the Commission for admission to the examination through the Head of his/her Department, who shall forward his/her application to the Commission unless he refuses his consent to the application.
- (II) A candidate who is not in Government service shall submit his/her application direct to the Secretary, Union Public Service Commission.
- (iii) No candidate may make more than one application in respect of any one occasion on which an examination is held.
  - 21. A candidate must be either-
    - (i) A citizen of India, or
    - (ii) a person who has migrated from Pakistan with the intention of permanently settling in India; or
    - (iii) a subject of Nepal or of Sikkim or of a Portuguese or French possession in India.

Note 1.—If a candidate belongs to category (ii) or (iii) above, he/she must be a person in whose favour a certificate of eligibility has been granted by the Government of India. A candidate in whose favour such a certificate is necessary may be provisionally appointed subject to the necessary certificate being eventually given to him/her by the Government.

Note 2.—Persons who migrated to India from Pakistan before 19th July 1948 and have been ordinarily resident in India since then are eligible for appointment to services and posts under the Government of India without certificates of eligibility quadritizens of India. Persons who so migrated on or after the 19th July 1948 are non-citizens and must secure certificates of eligibility for appointment to Union Services, unless they had migrated before 30th September 1948 and had got themselves registered as citizens within the time allowed or had entered the Union Services without certificates of eligibility under the old instructions in which case certificates of eligibility will not be necessary.

22. A candidate must have attained the age of 20 and must not have attained the age of 25 (30 in case of a candidate possessing foregin qualifications) on the date prescribed for this purpose in the Notice issued by the Commission under Rule 17.

Note 1.—The upper age limit will be relaxable

- (i) up to a maximum of three years if a candidate belongs to a scheduled caste or a scheduled tribe or is a bona fide displaced person from Pakistan;
- (ii) up to a maximum of six years if a candidate belongs to a scheduled caste or a scheduled tribe and is also a bona fide displaced person from Pakistan;
- (iii) up to the age of 35 years on the date of commencement of the Selection in the case of a candidate who took part in national movements and who fulfils the conditions laid down in Appendix IV-A to the Rules.

N.B.—Save as provided above the age limits prescribed can in no case be relaxed.

Note 2.—These age limits apply whether or not a candidate is already in Government Service.

- 23. A candidate must satisfy the Commission that his/her character is such as to make him/her suitable for appointment to the Service.
  - 24. A candidate must have-
    - (i) passed Sections A and B of the Associate Membership Examination of the Institution of Engineers (India) or have any other educational qualifications recognised by that Institution as exempting from passing these Sections, vide Appendix I; or
    - (ii) obtained an engineering degree of one of the Universities mentioned in Appendix II under the conditions prescribed in that Appendix; or
    - (iii) passed the Associateship Examination of the City and Guilds Institute (Imperial College of Science and Technology, South Kensington) in Civil Engineering; or

\*The submission of applications by persons in Government service is further governed by the Government Servants' Application for posts (Central Services)/(Railway Services) Rules published with the Government of India, Home Department/Railway Department (Railway Board), Notification No. F.189/43/Ests./E34-R.R.1, dated the 8th December 1943/22nd January 1945, as amended from time to time, and the corresponding rules made by State Governments.

- (iv) passed the Associate Examination from the Bengal Engineering College in Mechanical Engineering; or
- (v) obtained the B.Sc. degree in Engg. of Aligarh Muslim University; or
- (vi) passed the Honours Diploma examination in Civil, Mechanical or Electrical Engineering of the Loughborough College, Leicestershire, provided the candidate has passed the common preliminary examination or has been exempted therefrom:

Provided that in exceptional cases the Commission may on the recommendation of the Central Government or a State Government treat as a qualified candidate, a candidate who, though he/she has not all or any of the qualifications prescribed in this rule, has passed examinations conducted by other institutions of a standard which in the opinion of the Commission disquality him/her admission to the examination.

25. No candidate shall be admitted to the examination unless he/she holds a certificate of admission from the Commission.

The decision of the Commission as to the eligibility or otherwise of a candidate for admission to the examination shall be final.

- 26. No recommendations except those invited in the form of application shall be taken into consideration. Any attempt on the part of a candidate to obtain support for his/her candidature by other means may disqualify him/her for admission.
- 27. Candidates must pay such examination fees as Government may prescribe (see Appendix VI). No claim for a refund of any of these fees will ordinarily be entertained, nor can they be held in reserve for any other examination or selection.
- 28. Examinations under these Rules shall be conducted by the Commission in the manner prescribed in the regulations which form Appendix V to these Rules.
- 29. (i) After every examination the Commission shall make a list of the candidates in order of their merit as disclosed by the aggregate marks finally awarded to each candidate, and in that order so many candidates upto the number of unreserved vacancies announced under Rule 17 above, as are found by the Commission to be qualified by the examination and are considered by Government or the appointing authority, as the case may be, to be suitable in all other respects, shall be appointed.
- (ii) For the purpose of Rule 5 of these Rules, appointments to vacancies to be filled by members of a particular community or communities shall be made by Government or the appointing authority, as the case may be, in the order of merit of the candidates belonging to the particular community or communities, provided they have qualified in the examination and are in all respects suitable for employment in this service.
- 30. A candidate must be in good mental and bodily health and free from any physical defect likely to interfere with the discharge of his/her duties as an officer of the service. A candidate who (after such physical examination as Government or the appointing authority, as the case may be, may prescribe) is found not to satisfy those requirements will not be appointed. Only those candidates who are likely to be considered for appointment will be physically examined.

Note.—In order to prevent disappointment candidates are advised to have themselves examined by a Government Medical Officer of the Standing of a Civil Surgeon, before applying for admission to the examination. Particulars of the nature of the physical test to which candidates will be subjected before appointment and the standards required can be had from the Commission.

- 31. (a) Appointments shall be made on probation for a period of three years.
- (b) If, in the opinion of Government, the work or conduct of an officer on probation is unsatisfactory, or shows that he/she is unlikely to become efficient, Government may discharge him/her forthwith.
- (c) On the conclusion of his/her period of probation, Government may confirm the officer in his/her appointment, or if his/her work or conduct has, in the opinion of Government been unsatisfactory Government may either discharge him/her from the service or may extend his/her period of probation for such further period as Government may think fit.
- (d) If no action is taken by Government under subrule (b) or (c) of this rule, the period after the prescribed period of probation shall be treated as an engagement from month to month terminable on either side on the expiration of one calendar month's notice in writing.

- (e) If the power to make appointments in the Service is delegated by Government to any officer, that officer may exercise all or any of the powers of Government under this rule.
- (f) Particulars as to pay and general conditions of service prescribed for probationers in the Mechanical Engineering and Transportation (Power) Department of the Superior Revenue Establishment of Indian Railways, will be found in Appendix VII.

#### APPENDIX I

List of Examinations recognised by the Institution of Engineers (India) as exempting from Sections "A" and "B" of the Associate Membership Examination [vide Rule 24(i)].

Institution of Civil Engineers, London.—Sections A and B of the Associate Membership Examination.

Institution of Mechanical Engineers, London.—Sections A and B of the Associate Membership Examination.

Institution Electrical Engineers, London.-The Associate Membership Examination.

Oxford .- B.A. with Honours in Engineering Science Final Honours School.

Cambridge.-B.A. (Honours) in Mechanical Science Tripos.

St. Andrews.-B.Sc. in Engineering.

Glasgow.—B.Sc. in Engineering.

Edinburgh.-B.Sc. in Engineering.

Dublin.-B.A.I. (ordinary or with Honours) in Engineering.

McGill University (Montreal).—B.Sc. in "Civil" or "Mechanical" or "Electrical" or "Metallurgical" or "Mining" Engineering. (Honours or Ordinary Degree).

Durham.—B.Sc. in "Civil" or "Mechanical" or "Electrical" Engineering or in "Naval Architecture" (Honours or Ordinary Degree).

London.—B.Sc. (Internal or External Degree) in Engineering (not including the B.Sc. in Engineering Metallurgy) (Honours or Ordinary Degree). B.Sc. [Internal in Engineering (Mining)] [obtained in or after 1926]. B.Sc. (External) in Engineering (Mining) [Honours Degree obtained in or after 1935].

Victoria University (Manchester)-

B.Sc. Tech. (Ordinary Course, Division I) in Electrical Engineering.

B.Sc. Tech. (Ordinary Course, Division II) in Electrical Engineering.

B.Sc. Tech. (Higher Course, Honours Division or Ordinary Course, Division I) in Municipal Engineering.

B.Sc. Tech. Ordinary Degree obtained in or after 1935 in Municipal Engineering.

B.Sc. Tech. (Ordinary Course, Division I), in Mechanical Engineering.

B.Sc. in Engineering (Honours Degree, or Ordinary Degree from 1925 onwards).

B.Sc. Tech. in "Mechanical" or "Electrical" Engineering (Honours Division in the Final Examination).

Birmingham.—B.Sc. in "Civil" or "Mechanical" "Electrical" Engineering (Honours or Ordinary Degree).

Liverpool.—B.Eng. in "Civil" or "Mechanical" or "Marine" or "Electrical" Engineering, or "Naval Architecture" (Honours or Ordinary Degree).

Leeds.—B.Sc. in "Civil" or "Mechanical" or "Electrical" Engineering (Honours or Ordinary Degree).
B.Sc. (Mining Engg.) [Honours or Ordinary Degree].

Sheffleld.—B.Eng. in "Civil" or "Mechanical" or "Electrical" Engineering (Honours Degree or Ordinary Degree with a First Class in the Final Examination will not be required in the cases of degrees obtained in or after June 1930).

B.E. (Met.)......Degree in Honours.

Bristol.—B.Sc. in "Civil" or "Mechanical" or "Electrical" Engineering (Honours or Ordinary Degree).

Wales.-B.Sc. in "Civil" or "Mechanical" or "Electrical" Engineering.

National University of Ireland.-B.E.

Queen's University (Belfast).—B.Sc. in Engineering.

Sydney.—B.E. in "Civil" or in "Mechanical" and "Electrical" Engineering.

Melbourne.-B.C.E., B.Mech.E., or B.E.E.

New Zealand.—B.E. in "Civil" or "Mechanical" or "Electrical" Engineering.

Adelaide.-B.E. in "Clvil", "Mechanical" or "Electrical" Engineering.

Queensland.—B.E. in "Civil" or in "Mechanical" and "Electrical" Engineering.

Western Australia, -- B.E.

Cape Town.—B.Sc. in Engineering.

Withwaterstand .- B.Sc. in "Civil" or in "Mechanical" and "Electrical" Engineering.

Calcutta.-B.E. Examination in Civil or Mechanical or Electrical Engineering.

B.Met. B.E. (Met.).

Bombay. - B.E. Examination.

Madras.--B.E. Examination.

Benares Hindu University.-B.Sc. Examination in Engg.

B.Sc. (Mining), B.Sc. (Met.).

Patna.-B.Sc. (Engg.).

Rangoon.-B.Sc. in Engineering.

Mysore.-B.E. in Civil, Mechanical or Electrical Engineering.

Punjab.-B.Sc. in Engineering.

East Punjab Engineering College, Roorkee.—B.Sc. (Engg.).

Osmania University (Hyderabad).-B.E.

Travancore University.—B.Sc. (Eng.) degree.

Annamalai.—Degrees in Civil, Mechanical or Electrical Engineering (from 29-1-50 onwards).

Rajputana.-B.E. in Mechanical or Electrical Engi-

Roorkee.-Degrees in Electrical or Mechanical Engineering.

Poona.--B.E.

Diplomas in Engineering-

City and Guilds (Engineering) College, Kensington (A.C.G.I.).

University College, London

King's College, London,

City and Guilds of London Institute, Technical College, Finsbury—Diploma or Higher Certificate (Three years' course) if taken by Matriculated Students or Students who have passed the Institution Studentship Examination or its recognised equivalent.

City and Guilds, London, Final Grade Examination in Electrical Engineering Practice. Parts I and II (Examination No. 52) if taken on or before 24th November 1949; Faraday House, London, Diploma in Electrical Engineering provided the diploma is obtained by actually passing the examination.

Royal Technical College, Glasgow Final Diploma Examination in Mechanical or Electrical Engineering provided an approved Matriculation Examination has been passed before beginning the course.

Thomason Civil Engineering College, Roorkee.— Diploma in Civil Engineering (formerly Assistant Engineer's Certificate).

Indian Institute of Science, Bangalore.—Certificate in Electrical Technology, or in Electrical Communication Engineering.

Manchester.-Certificate in Technology, Mechanical or Electrical Engineering.

Maclagan Engineering College-

"A" Class Diploma in the First Division (65 per cent. or more marks) and in the Honours Division (80 per cent. or more marks) in (i) Mechanical Engineering and (ii) Electrical Engineering from 1935.

"A" Class Diploma in (1) Mechanical Engineering, (2) Electrical Engineering for candidates who qualified before 1935.

Bengal Engineering College.—Associates in Mechanical and Electrical Engineering.

College of Engineering and Technology, Bengal-

- (1) Engineering Degree.
- (2) Special Degree Examination.
- (3) Diplomas in Mechanical, Electrical and Chemical Engineering from 1941 onwards provided the candidates have passed Intermediate Examination in Science of a recognised University with Physics, Chemistry and Mathematics.

School of Military Engineering, Roorkee-

Engineer Officers' Supplementary Engineering Course (only upto April 1950).

Diploma of the College of Engineering, Guindy, upto 1945.

Diploma in Mining Engineering, Indian School of Mines, Dhanbad from 1926 onwards.

Delhi Polytechnic.—Diploma in Electrical and Mechanical Engineering of the All India Council of Technical Education.

Heriot-Watt College, Edinburgh.—Associateship in Electrical Engineering.

Naval Officers-

Examination which qualifies as Lieutenant (E).

Royal Naval College, Greenwich.—Professional Certificate for Constructors.

School of Military Engineering, Kirkee-

- (1) Young Officers' R.I.E. Course in Civil Engineering;
- (2) Young Officers, I.E.M.E. Course in Electrical and Mechanical Engineering.

LIST OF DIPLOMAS AND DEGREES OF AMERICAN ENGINEERING INSTITUTIONS THE CURRICULA OF WHICH HAVE BEEN
ACCREDITED BY THE ENGINEERS COUNCIL FOR PROFESSIONAL DEVELOPMENT, NEW YORK, AND WHICH ARE
RECOGNISED BY THE INSTITUTION OF ENGINEERS (INDIA)
FOR EXEMPTION FROM SECTIONS A AND B OF THE
ASSOCIATE MEMBERSHIP EXAMINATION. THE DIPLOMAS
AND DEGREES SHOULD HAVE ACTUALLY BEEN TAKEN AFTER
A FULL COURSE OF STUDIES FOR NOT LESS THAN THREE
YEARS IN SUCH INSTITUTIONS, ANY PERIOD OF EXEMPTION
GRANTED BY THE INSTITUTIONS BEING INCLUDED IN
RECKONING THESE THREE YEARS.

#### (Subject to periodic revision)

Akron. University of.—Electrical<sup>3</sup> (Mechanical, industrial and aeronautical options)<sup>3</sup>.

Alabama Polytechnic Institute.—Civil, electrical, mechanical,

Alabama, University of.—Aeronautical, civil, electrical, industrial, mechanical, mining.

Alaska, University of.—Civil, mining (including metallurgical and geological options).

Arizona, University of.—Civil, electrical, mechanical, mining.

Arkansas, University of.—Civil, electrical, mechanical. Brooklyn, Polytechnic Institute of.—Chemical (day and 8 year evening), civil<sup>1</sup>, electrical<sup>1</sup>, mechanical<sup>1</sup>.

Brown University.-Civil, electrical, mechanical.

Bucknell University.—Chemical, civil, electrical, mechanical.

California, Institute of Technology.—Aeronautical (5 and 6 year courses), chemical (5 year course), civil, electrical, mechanical.

California, University of.—Civil, electrical, mechanical, metallurgical (metallurgy), mining, petroleum.

Carnegie, Institute of Technology.—Chemical<sup>4</sup>, civil<sup>1</sup>. electrical<sup>1</sup>,<sup>4</sup>, industrial (management)<sup>1</sup>,<sup>4</sup>, mechanical<sup>1</sup>,<sup>4</sup>, metallurgical<sup>1</sup>,<sup>4</sup>.

Case Institute of Technology.—Chemical, civil, electrical, mechanical, metallurgical,

 $\begin{tabular}{lll} $Catholic & University & of & America. & Aeronautical, \\ architectural, & civil, & electrical, & mechanical. \end{tabular}$ 

Cincinnati. University of:—Aeronautical³, chemical³. civil³, electrical³, mechanical³.

Citadel, The.-Civil.

Clarkson College of Technology.—Chemical, civil, electrical, mechanical.

Clemson Agricultural College.—Civil, electrical, mechanical.

Colorado School of Mines.—Geological, metallurgical, mining, petroleum.

Colorado State College.—Civil, electrical, mechanical. Colorado, University of.—Architectural, civil, electrical, mechanical (includes aeronautical option).

 $\begin{tabular}{ll} $Columbia$ & $University.--Chemical^2, & civil^2, & electrical^2, \\ industrial^2, & mechanical^2, & metallurgical^2, & mining^2. \end{tabular}$ 

Connecticut, University of.—Civil, electrical, mechanical.

Cooper Union School of Engineering.—Chemical<sup>5</sup>,  ${\rm civil}^5$ ,  ${\rm electrical}^5$ ,  ${\rm mechanical}^5$ .

Cornell University.—Chemical, civil, electrical, industrial (administrative), mechanical.

Dartmouth College.—Civil.

Delaware, University of.—Chemical, civil, electrical, mechanical.

Denver, University of .- Electrical.

Detroit. University of.—Aeronautical<sup>4</sup>, architectural<sup>4</sup>, chemical<sup>4</sup>, civil<sup>4</sup>, electrical<sup>4</sup>, mechanical<sup>4</sup>,

Drexel. Institute of Technology.—Chemical4, civil4, electrical4, mechanical4.

Duke University.-Civil, electrical, mechanical.

Florida, University of.—Chemical, civil, electrical, industrial, mechanical.

George Washington University.—Civil, electrical, mechanical.

Georgia, School of Technology.—Aeronautical, ceramic<sup>4</sup>, chemical (including co-operative curriculum)<sup>4</sup>, civil<sup>4</sup>, electrical<sup>4</sup>, mechanical<sup>4</sup>.

Harvard University<sup>5</sup>.—Civil, communication, electrical, industrial (engineering and business administration), mechanical, metallurgical (physical metallurgy), sanitary.

Idaho, University of.—Civil. electrical, mechanical, metallurgical (metallurgy), mining (including geographical option).

Illinois Institute of Technology (Armour College of Engineering)8.—Chemical, civil, electrical, mechanical.

Illinois, University of.—Architectural, ceramic (technical option), chemical, civil, railway civil, electrical, railway electrical, general?, mechanical, railway mechanical, metallurgical, mining.

Iowa State College.—Agricultural, architectural, ceramic, chemical, civil, electrical, general<sup>7</sup>, mechanical.

Iowa, State University of.—Chemical, civil, electrical, mechanical.

Johns Hopkins University.—Chemical, civil, electrical, mechanical.

Kansas State College.—Agricultural, architectural, civil, electrical, mechanical.

Kansas, University of.—Architectural, civil, electrical, mechanical, mining.

Kentucky, University of.—Civil, electrical, mechanical, metallurgical, mining.

Lafayette College.—Civil, electrical, industrial (administrative), mechanical, metallurgical, mining.

Lehigh University.—Chemical, civil, electrical, industrial, mechanical, metallurgical, mining.

Loiusiana State University.—Chemical, civil, electrical, mechanical, petroleum.

Louisville, University of.—Chemical<sup>4</sup>,  $civil^4$ ,  $electrical^4$ ,  $mechanical^4$ .

Maine, University of.—Civil, electrical, general, mechanical.

Manhattan College.-Civil, electrical.

Marquette University.—Civil³, electrical³, mechanical³.

Maryland, University of.—Chemical, civil, electrical, mechanical.

Massachusetts Institute of Technology.—Aeronautical, building and construction, chemical, civil (includes option in sanitary engineering), electrical<sup>4</sup>, general<sup>7</sup>, industrial (business and engineering administration), mechanical<sup>4</sup>, metallurgical (metallurgy), naval architecture and marine engineering (including marine transportation).

Michigan College of Mining and Technology.—Chemical, civil, electrical, mechanical, metallurgical, mining.

Michigan State College.—Civil, electrical, mechanical.

Michigan, University of.—Aeronautical, chemical, civil. electrical, engineering mechanics, mechanical, metallurgical, naval architecture and marine engineering, transportation.

Minnesota, University of,—Aeronautical, chemical, civil, electrical, mechanical, metallurgical, mining, petroleum.

Mississippi State College.—Civil, electrical, mechanical,

Missouri School of Mines and Metallurgy.—Ceramic?, civil, electrical, metallurgical, mining (mine) (including petroleum option).

 ${\it Missouri, \ University \ of.} \hbox{---Chemical, \ civil, \ electrical, mechanical.}$ 

Montana School of Mines.—Geological, metallurgical, mining.

Montana State College.—Civil, electrical, mechanical.

Nebraska, University of.—Agricultural, architectural, civil, electrical, mechanical.

Nevada, University of.—Electrical, mechanical, mining

New Hampshire, University of.—Civil, electrical, mechanical.

New Mexico College of Agricultural and Mechanic Arts—Civil, electrical, mechanical.

New Mexico School of Mines,-Geological, mining, petroleum.

New Mexico, University of -Civil, electrical, mechanical.

New York, College of the City of.—Civil<sup>1</sup>, electrical<sup>1</sup>, mechanical<sup>1</sup>.

New York State College of Ceramics.—(at Alfred University).—Ceramic.

New York University.—Aeronautical, chemical (day and 7 year evening), civil<sup>1</sup>, electrical<sup>1</sup>, industrial (administrative), mechanical<sup>1</sup>,

Newark College of Engineering.—Civil\*, electrical\*, mechanical\*.

North Carolina State College.—Ceramic, civil, electrical, mechanical,

North Dakota Agricultural College.—Architectural, mechanical.

North Dakota, University of.—Civil, electrical, mechanical, mining.

Northeastern University.—Chemical<sup>3</sup>, civil<sup>3</sup>, electrical<sup>3</sup>, industrial<sup>3</sup>, mechanical<sup>3</sup>.

Northwestern University.—Chemical, civil, electrical, mechanical.

Norwich University .-- Civil, electrical,

Notre Dame, University of.—Aeronautical, civil, electrical, mechanical, metallurgical (metallurgy).

Ohio State University.—Ceramic, chemical, civil, electrical, industrial, mechanical, metallurgical, mining (mine).

Oklahoma Agricultural and Mechanical College.—Civil, electrical, industrial, mechanical.

Oklahoma, University of.—Architectural, chemical, civil, electrical, mechanical, petroleum.

Oregon State College.—Chemical, civil, electrical, mechanical.

Pennsylvania State College.—Architectural, ceramic (ceramics), chemical, civil, electrical, fuel technology, industrial, mechanical, metallurgical (metallurgy), mining, petroleum and natural gas, sanitary.

Pennsylvania, University of.—Chemical, civil, electrical, mechanical.

Pittsburgh, University of.—Chemical<sup>4</sup>, civil<sup>4</sup>, electrical<sup>4</sup>, industrial<sup>4</sup>, mechanical, metallurgical<sup>4</sup>, mining<sup>4</sup>, petroleum<sup>4</sup>.

Pratt Institute.—Electrical, mechanical.

Princeton University.—Chemical, civil, electrical, mechanical.

Purdue University.—Aeronautical, chemical, civil, electrical, mechanical, metallurgical.

Rensselaer Polytechnic Institute.—Aeronautical, chemical, civil, electrical, industrial, mechanical, metallurgical.

Rhode Island State College.—Civil, electrical, mechanical.

Rice Institute.—Chemical, civil, electrical, mechanical. Rochester, University of.—Chemical, mechanical.

Rose Polytechnic Institute.—Civil, electrical, mechanical.

Rutgers University.—Civil, electrical, mechanical. sanitary.

Santa Clara, University of.—Civil, electrical, mechanical.

South Carolina, University of .- Civil, electrical.

South Dakota State College.—Civil, electrical, mechanical.

South Dakota State School of Mines.—Civil, electrical, general?, metallurgical, mining.

Southern California, University of.—Civil, electrical, mechanical, petroleum.

Southern Methodist University.—Civil $^4$ , electrical $^4$ , mechanical $^4$ .

Stanford University.—Civil, electrical, mechanical, metallurgical, mining, petroleum.

Stevens Institute of Technology.—General?

Swarthmore College.—Civil, electrical, mechanical.

Syracuse University.—Chemical, civil, electrical, industrial (administrative), mechanical.

Tennessee, University of.—Chemical, civil, electrical, mechanical.

Texas, Agricultural and Mechanical College of.—Aeronautical, chemical, civil, electrical, mechanical, petroleum (4 and 5 year courses).

Texas, College of Mines and Metallurgy.—Mining (mining option, mining geology, metallurgy option).

Texas, Technological College.—Civil, electrical, mechanical.

Texas, University of.—Architectural, chemical, civil, electrical, mechanical, petroleum (petroleum production).

Toledo, University of,—General<sup>3,7</sup>.

Tufts College.—Civil, electrical, mechanical.

Tulane University of Louisiana.—Civil, electrical, mechanical.

Tulsa, University of.—Petroleum (including option in refining and production) $^4$ .

Union College,—Civil, electrical?.

United States Coast Guard Academy.-General7.

Utah State Agricultural College.—Civil.

Utah, University of.—Civil, electrical, mechanical metallurgical, mining.

Vanderbilt University.—Civil, electrical, mechanical.

Vermont, University of.—Civil, electrical, mechanical. Villanova College.—Civil, electrical, mechanical.

Virginia Military Institute.—Civil, electrical.

Virginia Polytechnic Institute.—Ceramic, chemical, civil. electrical, industrial, mechanical.

Virginia, University of.—Chemical, civil, electrical, mechanical,

Washington, State College of.—Architectural, civil, electrical, mechanical (basic option), metallurgical, mining.

Washington University,—Architectural, civil, electrical, industrial (administrative), mechanical.

Washington, University of.—Aeronautical, ceramic, chemical, civil, electrical, mechanical, metallurgical, mining.

Wayne University.-Civil, electrical, mechanical.

Webb Institute of Naval Architecture.—Naval architecture and marine engineering.

West Virginia University.—Civil, electrical, mechanical, mining.

Wisconsin, University of.—Chemical, civil, electrical, mechanical, metallurgical, mining.

 $\begin{tabular}{ll} Worcester & Polytechnic & Institute. \end{tabular} - Chemical, & civil, \\ electrical, & mechanical. \end{tabular}$ 

Wyoming, University of —Civil, electrical, mechanical. Yale University.—Chemical. civil, electrical, mechanical, metallurgical (metallurgy).

## Explanatory Notes

\*With the exception of the chemical engineering curricula this list is corrected to October 24, 1947, and is subject to continual revision. It applies only to curricula which have been inspected by the committee on engineering schools, whether conducted on the usual plan of operation or on the accelerated plan. At the request of the council of the American Institute of Chemical Engineers, due to the effects of the war upon education in chemical engineering, all accrediting of chemical engineering curricula ceased with the 1943 list. Until such time as reasonably normal educational activities in the chemical engineering fields have been resumed and re-examinations made, no current list for this division of engineering will be published.

- (1) Accrediting applies to the day and evening curricula.
- (2) Accrediting applies to the 4 year and 5 year curricula leading to the bachelor of science degree.
- (3) Accrediting applies to the co-operative curriculum only.
- (4) Accrediting applies to both the co-operative and regular curricula.
- (5) Accrediting applies to day and to 6 year evening curricula in the Cooper Union School of Engineering as submitted to E.C.P.D.
- (6) Accrediting applies only to curriculum as submitted to E.C.P.D. and upon completion of which a certificate is issued by Harvard University certifying that the student has pursued such a curriculum.
- (7) The accrediting of a curriculum in general engineering implies satisfactory training in engineering sciences and in the basic subjects pertaining to several fields of engineering; it does not imply the accrediting as separate curricula of those component portions of the curriculum such as civil, mechanical or electrical engineering that usually are offered as complete professional curricula leading to degrees in these particular fields.
- (8) On July 24, 1940, Illinois Institute of Technology was formed by the consolidation of Armour Institute of Technology and Lewis Institute. Curricula now listed under Illinois Institute of Technology were listed under Armour Institute of Technology before October 24, 1940.

## LIST OF ACCREDITED CURRICULA OF TECHNICAL INSTITUTE Type

Academy of Aeronautics (LaGuardia Field, N.Y.).—Aircraft design and construction (resident full-time programs and resident part-time evening programs), aircraft mechanics and maintenance (resident full-time programs and resident part-time evening programs).

Aeronautical Institute (Hawthorne, Calif.).—Electrical engineering.

Aeronautical University.—The (Chicago, Ill).—Aeronautical engineering drafting.

Bliss Electrical School (Washington, D.C.).—Fundamentals of industrial electrical engineering.

Capitol Radio Engineering Institute (Washington, D.C.).—Residence course in practical radio engineering, correspondence course in practical radio engineering.

Franklin Technical Institute (Boston, Mass.).—Industrial electricity.

Wentworth Institute (Boston, Mass.).—Machine construction and tool design, steam and diesel engineering architectural construction, electrical construction.

## APPENDIX II

LIST OF UNIVERSITY DEGREES WHICH WILL BE RECOGNISED FOR ADMISSION TO THE EXAMINATION [vide Rule 24(ii)].

Cambridge.—Ordinary degree B.A., in Engineering provided the graduate has passed in the principal subjects, Engineering I, Engineering II and Engineering III.

Glasgow.—B.Sc. in Naval Architecture (Honours or Ordinary degree).

Durham.—B.Sc. in Marine Engineering.

Aberdeen.—B.Sc. in Engineering (Honours or Ordinary degree).

Note.—The above degrees will be accepted only if taken after three years' study and the passing of the regular examinations in the several Universities. The conditions as to three years' study will not, however, apply to Indians who, having taken an Indian degree which exempts them from part of the University course, shall have taken one of the above degrees in less than three years in accordance with the regulations of the University concerned.

## APPENDIX III

A candidate shall be held to be a member of the Scheduled Castes if he/she belongs to one of the castes specified in the list below under the State in which he/she and his/her family ordinarily reside.

## LIST OF SCHEDULED CASTES

## Part I-Assam

Throughout the State:-

- 1. Bansphor.
- 2. Bhuinmali or Mali.
- 3. Brittial-Bania or Bania.
- 4. Dhupi or Dhobi.
- 5. Dugla or Dholi.
- 6. Hira.
- 7. Jhalo or Malo.
- 8. Kaibartta or Jaliya.
- 9. Lalbegi.
- 10. Mahara.
- 11. Mehtar or Bhangi.
- 12. Muchi.
- 13. Namasudra.
- 14. Patni.
- 15. Sutradhar.

## Part II--Bihar

- 1. Throughout the State: --
  - 1. Bauri.
  - 2. Bantar.
  - 3. Bhogta.
  - 4. Chamar.
  - 5. Chaupal.6. Dhobi.
  - 7. Dom.
  - 8. Dusadh, including Dhari or Dharhi.
  - 9. Ghasi.

- 10. Halalkhor.
- 11. Hari, including Mehtar.
- 12. Kanjar.
- 13. Kurariar.
- 14. Lalbegi.
- 15. Mochi.
- 16. Musahar. 17. Nat.
- 18. Pan.
- 19. Pasi.
- 20. Rajwar.
- 21. Turi.
- In Patna and Tirhut divisions, and the districts of Monghyr, Bhagalpur, Purnea and Palamau:—

Bhumij.

3. In Patna, Shahabad, Gaya and Palamau districts:—

Bhuiya.

4. In Shahabad district:

## Part III-Bombay

- 1. Throughout the State:-
  - 1. Ager.
  - 2. Asodi.
  - 3. Bakad.
  - 4. Bhambi.
  - 5. Bhangi.
  - 6. Chakrawadya-Dasar.
  - 7. Chalvadi.
  - 8. Chambhar, or Mochigar, or Samagar.
  - 9. Chena-Dasaru.
  - 10. Chuhar or Chuhra
  - 11. Dakaleru.
  - 12. Dhegu-Megu,
  - 13. Dhor.
  - 14. Garoda.
  - 15. Haller.
  - 16. Halsar, or Haslar, or Hulsavar.
  - 17. Holya, or Garode.
  - 18. Kolcha, or Kolgha.
  - 19. Lingader.
  - 20. Machigar.
  - 21. Madig, or Mang.
  - 22. Mahar.
  - 23. Mahyavanshi.
  - 24. Mangarudi.
  - 25. Meghval, or Menghwar.
  - 26. Mini Madig.
  - 27. Mukri.
  - 28. Nadia.
  - 29. Rohit.
  - 30. Shenva, or Shindhaya.
  - 31. Shingadav, or Shingadya.
  - 32. Sochi.
  - 33. Timali.
  - 34. Turi.
  - 35. Vankar.
  - 36. Vitholia.
- Throughout the State except in Gujrat division:— Mochi.
- 3. In North Kanara district:--Kotegar.

## Part IV-Madhya Pradesh

Scheduled Castes

1. Basor or Burud

- 2. Bahna or Bahana
- 3. Balahi or Balai
- 4. Chamar
- 5. Dom
- 6. Mang
- 7. Mehtar or Bhangi
- 8. Mochi
- 9. Satnami

Throughout the State.

Localities

7. Bakuda.

8. Bandi.

9. Bariki, 10. Bavuri.

11. Bellara.

12. Byagari.

13. Chachati.

14. Chakkiliyan.

15. Chalavadi,

16. Chamar.

17. Chandala,

Scheduled Castes		Localities	18. Cheruman.
10. Audhelia		In Bilaspur district.	19. Dandasi.
11. Bedar	,	In Akola, Amravati and	20. Devendrakulathan.
		Buldana districts.	21. Dom or Dombara, Paidi, Pano.
12. Chadar		In Bhandara and Sagar	22. Ghasi or Haddi, Relli Sachandi.
12 Dobalt or Dobarot		districts.	<sup>'</sup> 23. Godagali,
13. Dahait or Dahayat	• • • •	In Damoh sub-division of Sagar district.	24. Godari.
14. Dewar		To Dillow Down Date of	25. Godda,
		Bastar, Sarguja and Raigar	26. Gosangi.
15. Dhanuk		districts. In Sagar district, except in	27. Hasla.
10. Dimius		Damoh sub-division thereof.	28. Holeya.
16. Dohor		In Akola, Amravati, Buldana,	29. Jaggali. 30. Jambuvulu.
		Yeotmal, Balaghat, Bhan- dara, Chanda, Nagpur and	31. Kadan.
		Wardha districts.	32. Kalladi.
17. Ghasi or Ghasia			33. Kanakkan.
		Yeotmal, Balaghat, Bhan- dara, Bilaspur, Chanda,	34. Karimpalan.
		dara, Bilaspur, Chanda, Durg, Wardha, Nagpur,	35. Kodalo.
		Raipur, Sarguja, Bastar	36. Koosa.
10 Uolive		and Raigarh districts.	37. Koraga.
18. Holiya		In Balaghat and Bhandara districts.	38. Kudubi.
19. Kaikadi		In Akola, Amravati, Bul-	39. Kudumban.
		dana, Yeotmal, Bhandara,	40. Kuravan.
		Chanda, Nagpur and Wardha districts.	41. Kurichachan.
20 Katio		In Akola, Amravati, Bul-	42. Madari.
	• • •	dana, Yeotmal, Balaghat,	43. Madiga,
		Betul, Bhandara, Bilaspur, Chanda, Durg, Nagpur,	44. Maila.
		Nimar, Raipur, Wardha.	45. Mala (including Agency Malas)
		Bastar, Sarguja and Rai-	46. Mala Dasu.
		garh districts; in Hoshanga- bad and Seoni-Malwa	47. Malasar.
		tabsils of Hoshangabad	48. Matangi.
		district; in Chhindwara district except in Seoni	49. Mavilan.
		sub-division thereof; and	50. Moger.
		in Sagar district except in Damoh sub-division thereof.	51. Muchl.
21. Khangar		In Bhandara, Buldana and	52. Mundala.
Mr. Irmankow	•••	Sagar districts and in	53. Nalakeyava.
		Hoshangabad and Seoni-	54. Nayadi.
		Malwa tahsils of Hoshanga- bad district.	55. Pagadai. 56. Painda.
22. Kori		In Amravati, Balaghat, Betul,	57. Paky.
		Bhandara, Buldana, Chhind-	58. Pallan.
		wara, Jabbalpur, Mandla, Nimar, Raipur, Sagar,	59. Pambada.
		Durg, Bastar, Sarguja and	60. Pamidi.
		Raigarh districts; and in Hoshangabad district ex-	61. Panan,
		cept in Harda and Sohag-	62. Panchama.
00 36-1-4		pur tahsils thereof.	63. Panniandi.
23. Madgi	•••	In Akola, Amravati, Buldana, Yeotmal, Balaghat,	64. Paraiyan.
		Bhandara, Chanda, Nagpur	65. Paravan.
04 35-1 35-1 .		and Wardha districts.	66. Pulayan.
24. Mahar or Mehra	•••	Throughout the State, except in Harda and Sohagpur	67. Puthiral Vannan.
		tahsils of Hoshangabad	68. Raneyar.
a		district.	69. Samagara.
25. Rujjhar	•••	In Schagpur tahsil of Hoshangabad district.	70. Samban.
<b>n</b> -	T	<del>-</del>	71. Saparl. 72. Semman.
	-	—Madras	72. Semman. 73. Thoti.
Throughout the Stat	e:-	-	73. Thou. 74. Tiruvalluvar.
<ol> <li>Adi Andhra.</li> </ol>		,	75. Valluvan.
<ol><li>Adi Dravida.</li></ol>			76. Valmiki.
3. Adi Karnataka	l <u>.</u>		77. Vettuvan.
4. Ajila.			Part VI—Orissa
5. Arunthathiyar.			Throughout the State:-
6. Baira.			inroughout the plate.—

- 1. Adi-Andhra.
- 2. Amant or Amat.
- 3. Audhelia.
- 4. Badaik.
- 5. Bagheti.
- 6. Bajikar.
- 7. Bari.
- 8. Bariki.
- 9. Basor or Burud.
- 10. Bauri.
- 11. Bauti.

- 12. Bavuri.
- 13. Bedia or Bejia
- 14. Beldar.
- 15. Bhata.
- 16. Bhumil.
- 17. Chachati,
- 18. Chamar.
- 19. Chandala (Chandal).
- 20. Cherua or Chhelia.
- 21. Dandasi.
- 22. Desuabhumij.
- 23. Dewar.
- 24. Dhanwar.
- 25. Dharua.
- 26. Dhoba or Dhobi.
- 27. Dom or Dombo.
- 28. Dosadha.
- 29. Ganda.
- 30. Ghantarghada or Ghantra.
- 31. Ghasi or Ghasia,
- 32. Ghogia.
- 33. Ghusuria.
- 34. Godagali.
- 35. Godari.
- 36. Godra.
- 37. Gokha.
- 38. Gunju or Ganju.
- 39. Haddi or Hadi or Hari.
- 40. Irika.
- 41. Jaggali.
- 42. Kandra or Kandara.
- 43. Karua.
- 44. Katia.
- 45. Kela.
- 46. Khadala.
- 47. Kodalo.
- 48. Kori.
- 49. Kumbhar.
- 50. Kurunga.
- 51. Laban.
- 52. Laheri.53. Madari.
- 54. Madiga.
- 55. Mahuria.
- 56. Mala or Jhala.
- 57. Mang.
- 58. Mangan.
- 59. Mehra or Mahar.
- 60. Mehtar or Bhangi.
- 61. Mewar.
- 62. Mochi or Muchi.
- 63. Mundapotta
- 64. Nagarchi.
- 65. Paidi.
- 66. Painda.
- 67. Pamidi.
- 68. Pan or Pano.
- 69. Panchama.
- 70. Panika.
- 71. Panka.
- 72. Pantanti.
- 73. Pap.
- 74. Pasi.
- 75. Patial or Patikar or Patratanti or Patus.
- 76. Pradhan.
- 77. Rajna.
- 78. Relli.
- 79. Sabakhia.
- 80. Samasi.
- 81. Sanei.
- 82. Sapari.
- 83. Satnami.
- 84. Sidhria.
- 85. Sinduria.

- 86. Siyal.
- 87. Sukuli.
- 88. Tamadia.
- 89. Tamudia.
- 90. Tiar or Tior.
- 91. Turi.
- 92. Valamiki or Valmiki.

## Part VII-Puniab

## Throughout the State: --

- 1. Ad Dharmi,
- 2. Bangali.
- 3. Barar.
- 4. Batwal.
- 5. Bawaria.
- 6. Bazigar.
- 7. Balmiki or Chura.
- 8, Bhanira.
- 9. Chamar.
- 10. Chanal.
- 11. Dagi.
- 12. Dhanak.
- 13. Dumna or Mahasha.
- 14. Gagra.
- 15. Gandhila
- 16. Kabirpanthi,
- 17. Khatik.
- 18. Kori or Koli.
- 19. Marija or Marecha.
- 20. Mazhabi.
- 21. Megh.
- 22. Nat.
- 23. Od.
- 24. Pasi. 25. Paerna.
- 26. Pherera.
- 27. Ramdasi or Ravidasi,
- 28. Sanhai,
- 29. Sanhal.
- 30. Sansi. 31. Sapela.
- 32. Sarera.
- 33. Sikligar.
- 34. Sirkiband.

## Part VIII---Uttar Pradesh

## Throughout the State: -

- 1. Agariya.
- 2. Badi.
- 3. Badhik.
- 4. Baheliya.
- 5. Baiga.
- 6. Balswar.
- 7. Bajaniya.
- 8. Bajgi.
- 9. Balahar.
- 10. Balmiki.
- 10. Baimiki. 11. Bangali.
- 12. Banmanus.
- 13. Bansphor.
- 14. Barwar.
- 15. Basor.
- 16. Bawariya.
- 17. Beldar.
- 18. Beriya.
- 19. Bhantu.
- 20. Bhoksa.
- 21. Bhuiya.22. Bhuyiar.
- 23. Boria.
- 24. Chamar.25. Chero.

- 26. Dabgar.
- 27. Dhangar.
- 28. Dhanuk.
- 29. Dharkar.
- 30. Dhobi.
- 31. Dhusia, or Jhusia.
- 32. Dom.
- 33. Domar.
- 34. Dusadh.
- 35. Gharami.
- 36. Ghasiya.
- 37. Gual.
- 38. Habura.
- 39. Hari.
- 40. Hela.
- 41. Jatava.
- 42, Kalabaz.
- 43. Kanjar.
- 44. Kapariya.
- 45, Karwal.
- 46. Khairaha.
- 47. Kharot.
- 48. Kharwar (excluding Benbansi).
- 49. Kol.
- 50. Korwa.
- 51. Lalbegi.
- 52. Majhwar.
- 53. Nat.
- 54. Pankha.
- 55. Parahiya.
- 56. Pasi.
- 57. Patarl.
- 58. Rawat.
- 59. Saharya. 60. Sanaurhiya.
- 61. Sansiya.
- 62. Shilpkar.
- 63. Turaiha.
- 2. In Bundelkhand division and the portion of Mirzapur district south of Kaimur Range.—

## Part IX-West Bengal

## Throughout the State:-

- 1. Bagdi.
- 2. Bahella.
- 3. Baiti.
- 4. Bauri.
- 5. Bediya.
- 6. Beldar.
- 7. Bhuimali.
- 8. Bhuiya. 9. Bhumij.
- 10. Bind
- 11. Char
- 12. Dhot
- 13. Doai.
- 14. Dom.
- 15. Dosadh. 16. Ghasi.
- 17. Gonrhi.
- 18. Hari.
- 19. Jalia Kaibartta.
- 20. Jhalo Malo or Malo.
- 21. Kadar.
- 22. Kandra.
- 23. Kaora.
- 24. Karenga.
- 25. Kastha.
- 26. Kaur.
- 27. Khaira.
- 28. Khatik.
- 29. Koch.
- 30. Konai.

- 31. Konwar.
- 32. Kora.
- 33. Kotal.
- 34. Lalbegi.
- 35. Lodha.
- 36. Lohar.
- 37. Mahar.
- 38. Mahli.
- 39. Mal.
- 40. Mallah.
- 41. Malpahariya.
- 42. Mehtor.
- 43. Muchi.
- 44. Musahar.
- 45. Nagesia.
- 46. Namasudra.
- 47. Nuniya.
- 48. Paliya.
- 49. Pan.
- 50. Pasl.
- 51. Patni.
- 52. Pod.
- 53. Rabha.
- 54. Rajbanshi. 55. Rajwar.
- 56. Sunri.
- 57. Tiyar.
- 58. Turi.

## Part X-Hyderabad

## Throughout the State:-

- 1. Anamuk.
- 2. Aray (Mala).
- 3. Arwa Mala.
- 4. Beda (Budga) Jangam.
- 5. Bindla.
- 6. Byagara.
- 7. Chalvadi.
- 8. Chambhar.
- 9. Dakkal (Dokkalwar). 10. Dhor.
- 11. Ellamalwar (Yellammalawandlu).
- 12. Holeya.
- 13. Holeya Dasari.
- 14. Kolupulvandlu.
- 15. Madiga.
- 16. Mahar.
- 17. Mala.
- 18. Mala Dasari.
- 19. Mala Hannai.
- 20. Malajangam.
- 21. Mala Masti,
- 22. Mala Sale (Netkani).
- 23. Mala Sanyasi.
- 24. Mang.
- 25. Mang Garodi.
- 26. Manne.
- 27. Mashti.
- 28. Mehtar.
- 29. Mitha Ayyalvar.
- 30. Mochi.
- 31. Samagara.
- 32. Sindhollu (Chindollu).

Part XI-Madhya Bharat.

## Throughout the State:-

- 1. Bagri or Bagdi.
- 2. Balai.
- 3. Barahar or Basod.
- 4. Bargunda.
- 5. Bedia.
- 6. Bhambi.
- 7. Bhangi or Mehtar.

- 8. Chamar.
- 9. Chindar.
- 10. Dhanuk.
- 11. Kanjar.
- 12. Khatik.
- 13. Koli.
- 14. Mahar.
- 15. Mochi.
- 16. Nat.
- 17. Pardhi.
- 18, Pasi.
- 19. Sansi.

## Part XII--Mysore

#### Throughout the State: --

- 1. Adidravida.
- Adikarnataka.
- 3. Banjara or Lambani,
- 4. Bhovl.
- 5. Koracha.
- 8. Korama.

## Part XIII—Patiala and East Punjab States Union

## Throughout the State: -

- 1. Ad Dharmi.
- 2. Bangali.
- 3. Barar.
- 4. Batwal.
- 5. Bawaria.
- 6. Bazigar.
- 7. Balmiki or Chura,
- 8. Bhanjra.
- 9. Chamar.
- 10. Chanal.
- 11. Dagi.
- 12. Dhanak.
- 13. Dumna or Mahasha,
- 14. Gagra.
- 15. Gnadhila.
- 16. Kabirpanthi.
- 17. Khatik.
- 18. Kori or Koli.
- 19. Marija or Marecha.
- 20. Mazhabi.
- 21. Megh.
- 22. Nat.
- 23. Od.
- 24. Pasi. 25. Perna.
- 26. Pherera.
- 27. Ramdasi or Ravidasi.
- 28. Sanhai.
- 29. Sanhal.
- 30. Sansi.
- 31. Sapela.
- 32. Sarera.
- 33. Sikligar.
- 34. Sirkiband.

## Part XIV-Rajasthan

## Throughout the State:-

- 1. Adi Dharmi.
- 2. Aheri.
- 3. Badi.
- 4. Bagri.
- 5. Bajgar.
- 6. Banspho
- 7. Bargi.
- 8. Bawaria. 9. Bhand.
- 10. Bhangi.
- 11. Bldakia.
- 12. Chamar.
- 13. Chura.

- 14. Dabgar.
- 15. Dhankia.
- 16. Dheda.
- 17. Dome.
- 18. Gandia.
- 19. Garancha Mehtar.
- 20. Godhi.
- 21. Jatia.
- 22. Kalbelia.
- 23. Kapadia Sansi.
- 24. Khangar.
- 25. Khatka.
- 26. Kooch Band.
- 27. Koria.
- 28. Kunjar.
- 29. Madari (Bazigar).
- 30. Majhabi.
- 31. Mehar.
- 32. Mehtar.
- 33. Mochi.
- 34. Nut.
- 35. Pasi.
- 36. Raigar. 37. Ramdasia.
- 38. Rawal.
- 39. Sarbhangi.
- 40. Singiwala.
- 41. Sansi.
- 42. Thori.
- 43. Tirgar.
- 44. Valmiki.

#### Part XV-Saurashtra

#### Throughout the State: --

- 1. Bawa (Dhedh).
- 2. Bhangi.
- 3. Chamadia.
- 4. Chamar.
- 5. Dangashia,
- 6. Garoda.
- 7. Garmatang. 8. Hadi.
- 9. Meghwal.
- 10. Senva.
- 11. Shemalia. 12. Thori.
- 13. Turi.
- 14. Turi-Barot.
- 15. Vankar.

## Part XVI-Travancore-Cochin

## Throughout the State: -

- 1. Ayyanavar.
- 2. Bharatar.
- 3. Chakkiliyan.
- 4. Domban. 5. Eravalan.
- 6. Kakkalan.
- 7. Kanakkan.
- 8. Kavara.
- 9. Kootan (Koodan),
- 10. Kuravan.
- 11. Mannan.
- 12. Nayadi.
- 13. Padannan.
- 14. Pallan. 15. Palluvan.
- 16. Panan.
- 17. Paravan. 18. Parayan (Sambavar).
- 19. Pathiyan.
- 20. Perumannan.
- 21. Pulayan.

- 22. Thandan.
- 23. Ulladan.
- 24. Uraly.
- 25. Vallon,
- 26. Valluvan.
- 27. Vannan.
- 28. Velan.
- 29. Vetan.
- 30. Vettuvan.

## APPENDIX III-A

## LIST OF SCHEDULED TRIBES

#### Part I-Assam

- 1. In the Autonomous Districts:--
  - 1. Dimasa (Kachari).
  - 2. Garo.
  - 3. Hajong.
  - 4. Khasi and Jaintia.
  - 5. Any Kuki tribes.
  - 6. Lakher.
  - 7. Any Lushai (Mizo) tribes.
  - 8. Mikir.
  - 9. Any Naga tribes.
  - 10. Synteng.
- 2. In the Tribal Areas other than the Autonomous Districts:—
  - 1. Abor.
  - 2. Aka.
  - 3. Apatani.
  - 4. Dafla.
  - 5. Galong.
  - 6. Khampti.
  - 7. Mishmi.
  - 8. Any Naga tribes.
  - 9. Singpho.
  - 10. Momba.
  - 11. Sherdukpen.
- 3. In the State of Assam excluding the Tribal Areas:—
  - 1. Boro-Borokachari.
  - 2. Deorl.
  - 3. Hojal.
  - 4. Kachari.
  - 5. Lalung.
  - 6. Mech.
  - 7. Miri.
  - 8. Rabha.

## Part II-Bihar

- 1. Throughout the State: -
  - 1. Asur.
  - 2. Baiga.
  - 3. Bathudi.
  - Bedia.
     Binjhia.
  - 6. Birhor.
  - 7. Birjia.
  - 8. Chero.
  - 9. Chik Baraik.
  - 10. Gond.
  - 11. Gorait.
  - 12. Ho.
  - 13. Karmali.
  - 14. Kharia.
  - 15. Kharwar. 16. Khond.
  - 17. Kisan.
  - 18. Kora.
  - 19. Korwa.
  - 20. Lohara.
  - 21. Mahli.
  - 22. Mal Paharia.

- 28. Munda
- 24. Oraon.
- 25. Parhaiya.
- 26. Santal.
- 27. Sauria Paharia.
- 28. Savar.
- 2. In the districts of Ranchi, Singbhum, Hazaribagh, Santal Parganas and Manbhum:—

#### Bhumit.

## Part III-Bombay

### Throughout the State:-

- 1 Barda
- 2. Bavacha.
- Bhil, including Bhagalia, Bhil Garasia, Dholf Bhil, Dungri Bhil, Dungri Garasia, Mewasi Bhil, Raval Bhil and Tadvi Bhil.
- 4. Chodhara.
- Dhanka.
- 6. Dhodia.
- 7. Dubla.
- 8. Gamit or Gamta.
- 9. Gond.
- 10. Kathodi or Katkari.
- 11. Konkna.
- 12. Koli Dhor.
- 13. Koli Mahadev.
- 14. Maychi.
- 15. Naikda or Nayak.
- Pardhi, including Advichincher and Phanse Pardhi.
- 17. Patella.
- 18. Pomla.
- 19. Powara.
- 20. Rathawa.
- 21. Thakur. 22. Valvai.
- 23. Varli.
- 24. Vasava.

## Part IV-Madhya Pradesh

## Īn---

- (1) Melghat taluq of Amravati district.
- (2) Baihar tahsil of Balaghat district.
- (3) Bhanupratappur, Bijapur, Dantewara, Jagdalpur, Kanker, Kondagaon, Konta and Narayanpur tahsils of Bastar district.
- (4) Betul and Bhainsdehi tahsils of Betul district.
- (5) Katghora tahsil of Bilaspur district.
- (6) Suroncha and Gharchiroli tahsils of Chanda district.
- (7) Amarwara, Chhindwara and Lakhnadon tahsils of Chhindwara district.
- (8) Balod (Sanjari) tahsil of Durg district.
- (9) Mandla, Niwas and Ramgarh (Dindori) tahsils of Mandla district.
- (10) Harsud tahsil of Nimar district.
- (11) Dharamjaigarh, Ghargoda, Jashpurnagar and Kharsia tahsils of Raigarh district.
- (12) Ambikapur, Baikunthpur, Bharatpur, Janakpur, Mahendragarh, Pal, Samari and Sitapur tahsils of Sarguja district:—
- 1. Andh.
- 2. Balga.
- 3. Bhaina.
- 4. Bharla-Bhumla or Bhulnhar-Bhumla.
- 5. Bhattra.
- 6. Bhil.
- 7. Bhunjia.
- 8. Binjhwar.
- 9. Birhul or Birhor.
- 10. Dhanwar.
- 11. Gadaba or Gadba.
- 12. Gond [including Madia (Maria) and Mudia (Muria)].
- 13. Halba.
- 14. Kamar.

- 15. Kawar or Kanwar.
- 16. Kharia.
- 17. Kondh or Khond or Kandh
- 18. Kol.
- 19. Kolam.
- 20, Korku.
- 21. Korwa.
- 22. Majhwar.
- 23. Munda.
- 24. Nagesia or Nagasia.
- 25. Nihal.
- 26. Oraon.
- 27. Pardhan.
- 28. Pardhi.
- 29. Parja.
- 30. Saonta or Saunta.
- 31. Sawar or Sawara.

#### Part V-Madras

## Throughout the State: --

- 1. Aranadan,
- 2. Bagata.
- 3. Bhottadas—Bodo, Bhottada, Muria Bhottada and Sano Bhottada.
- 4. Bhumias-Bhuri Bhumia and Bodo Bhumia.
- 5. Chenchu.
- Gadabas—Boda Gadaba, Cerllam Gadaba, Franji Gadaba, Jodia Gadaba, Olaro Gadaba, Pangi Gadaba and Pranga Gadaba.
- 7. Gondi-Modya Gond and Rajo Gond.
- 8. Goudus—Bato, Bhirithya Dudhokouria, Hato, Jatako and Joria.
- Kosalya Goudus—Bosothorlya Goudus, Chitti Goudus, Dangayath Goudus, Doddu Kamariya, Dudu Kamaro, Ladiya Goudus and Pullosoriya Goudus.
- Magatha Goudus—Bernia Goudu, Boodo Magatha, Bongayath Goudu, Ladya Goudu, Ponna Magatha and Sana Magatha.
- 11. Holva.
- 12. Jadapus.
- 13. Jatapus.
- 14. Kammara.
- 15. Kattunayakan.
- 16. Khattis-Khatti, Kommarao and Lohara.
- 17. Kodu.
- 18. Kommar.
- 19. Konda Dhoras.
- 20. Konda Kapus.
- Kondaraddis.
- 22. Kondhs Desaya, Kondhs, Dongria Kondhs, Kuttiya Kondhs, Tikiria Kondhs and Yenity Kondhs
- 23. Kota.
- Kotia—Børtika, Bentho Oriya, Dhulia or Dulia, Holva Paiko, Putiya, Sanrona and Sidho Paiko.
- Koya or Goud, with its sub-sects—Raja or Rasha Koyas, Lingadhari Koyas (ordinary) and Kottu Koyas.
- 26. Kudiva.
- 27. Kurumans.
- 28. Manna Dhora.
- 29. Maune.
- 30. Mukha Dhora-Nooka Dhora.
- 31. Muria.
- 32. Palgarapu.
- 33. Palasi.
- 34. Paniyan.
- 35. Porjas—Bodo Bonda, Daruva, Didua, Jodia, Mundili, Pengu, Pydi and Saliya.
- 36. Reddi Dhoras.
- 37. Savaras—Kapu Savaras. Khutto Savaras and Maliya Savara.
- 38. Sholaga.
- 39. Toda.
- 40. Inhabitants of the Laccadiva, Minicoy and Amindivi Islands who and both of whose parents were born in these Islands

#### Part VI-Orissa

#### Throughout the State: -

- 1. Bagata.
- 2. Baiga.
- 3. Banjara or Banjari.
- Bathudi.
- 5. Bhulya or Bhuyan.
- 6. Binjhal.
- 7. Binjhia or Binjhao.
- 8. Birhor.
- 9. Bondo Poraja.
- 10. Chenchu.
- 11. Dal.
- 12. Gadaba.
- 13. Ghara.
- 14. Gond.
- 15. Gorait or Korait.
- 16. Ho.
- 17. Jatapu.
- 18. Juang.
- 19. Kawar.
- 20. Kharia or Kharian.
- 21. Kharwar.
- Khond (Kond) or Kandha, or Nanguli Kandha or Sitha Kandha.
- 23. Kisan.
- 24. Kolah-Kol-Loharas.
- 25. Kolha.
- 26. Koli.
- 27. Kondadora.
- 28. Kora.
- 29. Korua.
- 30. Koya.
   31. Kulis.
- 32. Mahali.
- 33. Mankidi.
- 34. Mankirdia.
- 35. Mirdhas.
- 36. Munda (Munda-Lohara and Munda-Mahalis).
- 37. Mundari.
- 38. Oraon.
- 39. Paroja.
- 40. Santal.
- 41. Saora or Savar or Saura or Sahara.
- 42. Tharua.

## Part VII-Punjab

## In Spiti and Lahaul in Kangra District:— Tibetan.

## Part VIII-West Bengal

## Throughout the State: -

- 1. Bhutia.
- 2. Lepcha.
- 3. Mech.
- 4. Mru.
- Munda.Oraon.
- 7. Santal.

## Part IX-Hyderabad

## Throughout the State:-

- 1. Andh.
- 2. Bhil,
- 3. Chenchu or Chenchwar.
- 4. Gond (including Naikpod and Rajgond).
- 5. Hill Reddis.
- 6. Kolam (including Mannervarlu).
- 7. Koya (including Bhine Koya and Rajkoya).
- 8. Pardhan.
- 9. Thots.

#### Part X-Madhua Bharat

- 1. Throughout the State: --
  - 1. Gond.
  - 2. Korku.
  - 3. Seharia.
- 2. In the Revenue District of Jhabua; in the tahsils of Sendhwa, Barwani, Rajpur, Khargone, Bhikangaon and Maheshwar of the Revenue District of Khargone; in the tahsil of Sailana of the Revenue District of Ratlam; in the tahsils of Sardarpur, Kukshi, Dhar and Manawar of the Revenue District of Dhar:—

Bhils and Bhilalas (inclusive of sub-tribes).

#### Part XI-Musore

Throughout the State: -

- 1. Hasalaru.
- 2. Iruliga.
- 3. Jenu Kuruba.
- 4. Kadu-Kuruba.
- 5. Maleru.
- 6. Soligaru.

Part XII-Rajasthan

Throughout the Scheduled Areas of the State:-Bhil.

Part XIII-Saurashtra

Throughout the State:--

- 1. Adodia.
- 2. Daffer.
- 3. Ghantia.
- 4. Miyana.
- 5. Sindhi.
- 6. Wedva Waghri.

Part XIV-Travancore-Cochin

## Throughout the State:--

- 1. Hill Pulaya.
- 2. Kadar.
- 3. Kanikaran.
- 4. Kochu Velan.
- Malai Arayan.
- 6. Malai Pandaram.
- 7. Malai Vedan.
- 8. Malayan.
- 9. Malayarayar.
- 10. Mannan.
- 11. Muthuvan.
- 12. Palleyan.
- 13. Palliyar.
- 14. Ulladan (Hill dwellers).
- 15. Uraly.
- 16. Vishavan.

## APPENDIX IV

CONDITIONS OF APPRENTICESHIP FOR SPECIAL CLASS APPRENTICES SELECTED UNDER REGULATION 3(1) IN PART I OF THE REGULATIONS.

1. Candidates selected for appointment as Special Class Apprentices will be liable to undergo practical and theoretical training for 6 years in the first instance under an indenture binding them to serve on the Indian Railways on the completion of their training if their services are required. The continuance of apprenticeship from year to year will depend on satisfactory reports being received from the authorities under whom the apprentice may be working. If at any time during his/her apprenticeship, an apprentice does not satisfy the superior authorities that he/she is making good progress, he/she will be liable to be discharged from his/her apprenticeship.

Note.—The Government of India may at their discretion alter or modify the periods and courses of training.

2. The practical and theoretical training referred to above will be given in a railway workshop for the first four years of their apprenticeship. The apprentices will be granted a stipend of Rs. 100 per mensem during the first three years and Rs. 125 per mensem in the fourth year. During the first three years the apprentices will be required to undergo training in four

periods of time months each, six months in the shops followed by three months in the technical school, and will be examined at the end of each session. If unsuccessful at any of these examinations, they will be discharged from their apprenticeship. During the fourth year they will undergo only practical training and prepare for the examination for Associate Membership of the Institute of Civil or Mechanical Engineers.

Note.—Except as provided for in rule 5(b) below or in cases of discharge or dismissal due to insubordination, intemperance or other misconduct or breach of agreement. a week's notice of discharge from apprenticeship will be given.

3. Before completion of the 4th year of the training referred to in rule 2 above, the apprentices will be listed in order of merit on the results of the examinations held and the reports on the apprentices received during the period of apprenticeship. All the apprentices who have attained the qualifying standard will then be put on further training for 2 years (see rule 4 below).

Note.—An apprentice will be considered to have obtained the qualifying standard if he/she obtains a minimum of 50 per cent marks in the aggregate in all the examinations held during the 4 years of his/her training including the marks for the reports of the Principal, Technical School, and of the Deputy Chief Mechanical Engineer, provided that in each of the 4 years he/she has obtained a minimum of 45 per cent. marks in the aggregate and a minimum of 40 per cent. marks in any one subject.

4. Apprentices put on further training under Rule 3 will either be sent to one or more of the Indian Railways or to the United Kingdom for undergoing a further period of training for two years in a selected Locomotive or Carriage and Wagon Workshop in accordance with the syllabus prescribed for the purpose as modified from time to time. The apprentices may be required to attend after working hours, a technical college or special lectures on engineering subjects. Before completion of the training, they must qualify for Associate Membership of the Institution of Civil or Mechanical Engineers. During this period of training, the apprentices will be paid a stipend of Rs. 200/per mensem if the training is arranged in India and £ 400 per annum if they are sent to the United Kingdom. In the latter case, they will also be granted a free second class passage to the U.K. their stipend of Rs. 125 will be continued. The apprentices will also be eligible for an outfit allowance of Rs. 500 to provide themselves with such clothes and other necessary articles as they may require on the journey or immediately on their arrival in the United Kingdom.

Note 1.—While in the United Kingdom apprentices

Note 1.—While in the United Kingdom apprentices will be under the supervision and control of the High Commissioner for India.

NOTE 2.—Any fee or premium which may be required, in the opinion of the High Commissioner for India, to secure adequate training will be paid by Government.

Note 3.—The rate of stipend of £400 per annum to be granted to the apprentices while undergoing training in the U.K. specified above is provisional and is subject to revision as circumstances require.

- 5. (a) Apprentices sent to the United Kingdom will be granted a free first class passage to India on the successful termination of their apprenticeship. The stipend of £400 will be continued during the period of voyage.
- (b) Unsuccessful apprentices will be discharged from their apprenticeship, one month's notice of discharge being given along with the intimation that the apprentice has been unsuccessful. In the case of the apprentices who are sent to the United Kingdom for the further training and whose apprenticeship is unsuccessful, they may be granted a free second class passage back to India provided that they embark for India within a period of 3 months from the date of intimation that they have been unsuccessful.
- 6. Successful apprentices will be appointed on probation for three years on a commencing pay of Rs. 350 per mensem and posted to the Transportation (Power) Department on Indian Railways for the period of their probation. At the end of their probationary period they will be required to undergo a departmental examination which will include Accounting and Estimating. General and Subsidiary Rules. Factories Act. Workmen's Compensation Act. ability to handle labour and general application to work or works on which each officer is engaged while on probation. If retained in service thereafter they will be employed in the Mechanical Engineering and transportation (Power) Department.

7. The appointment and pay as a probationer will commence from (a) the date of completion of six years of apprenticeship or (b) the actual date of completion of training in the case of apprentices who undergo further training in India/the date of landing in India in the case of apprentices who are sent to the United Kingdom for the further training, whichever is later. Service for increment will count from the date of appointment as probationer.

Note 1.—The retention in service of the probationers and the grant of annual increments are subject to satisfactory reports on their work being received at the end of each year of probation.

Note 2.—Service as probationer may be terminated on 3 months' notice on either side.

8. Particulars as to pay and general conditions of service prescribed for officers in the Mechanical Engineering and Transportation (Power) Department of the Superior Revenue Establishment of Indian Railways will be found in Appendix VII.

## APPENDIX IV (A)

DETAILS FOR THE GRANT OF AGE CONCESSION TO PERSONS WHO TOOK PART IN NATIONAL MOVEMENTS

- 1. Grounds on which relaxation of age-limit will be granted.—To be eligible for the concession of relaxation of the upper age-limit for admission to the selection/examination, a candidate must have taken part in the national movements and must (a) either (i) have actually been debarred from or refused admission to a selection for recruitment of Special Class Railway Apprentices or to a competitive examination for recruitment to the Engineering services on account of his/her political activities.
- or (ii) have been imprisoned or detained on account of his/her political activities thus preventing his/her candidature for such selection/examination, and
- (b) at the time when he/she was so prevented from taking such selection/examination have been within the normal age-limits prescribed therefor.

Note.—It is not necessary for the purpose of this concession that a candidate should have actually been imprisoned or under detention at the time the selection/examination at which he/she would otherwise have been a candidate, was held.

- 2. The age relaxation to be allowed.—A candidate who fulfils the conditions of eligibility for the concession mentioned in the preceding paragraph will be allowed to appear at the selection/examination if he/she would have competed at it in the normal course, but for his/her participation in the national movements, if he/she is not over 35 years of age on the date of commencement of the selection/examination. He/she will not be eligible to claim this concession for admission to any selection/examination which may be held after the 31st December 1951.
- 3. Proof of participation in National Movements.—A candidate who claims the concession for relaxation of the age-limit should submit along with his/her application a certificate from a Member of Parliament or a State Legislature, or an affidavit filed before a First Class Stipendiary Magistrate by a respectable person testifying the facts about the candidate's participation in the national movements and his/her being debarred in consequence from admission to such selection/examination.
- 4. Applications.—A candidate who claims the benefit of this concession should submit his/her application through the State Government/Chief Commissioner of the State where he/she ordinarily resides, who will forward it to the Union Public Service Commission with necessary remarks by the date prescribed in the Notice.

## APPENDIX V

STANDARD AND SYLLABUS OF THE EXAMINATION (vide Rule 28)

The subjects of the examination, the time allowed for and the maximum marks allotted to each subject will be as follows:—

I. Compulsory subjects-

	Time	towolla	Maxim um m	ark
ı.	English (including Essay and Precis writing). 3	hougs	100	
2.	General Knowledge 2	hours	100	3
3.	Applied Mechanics (including strength of materials).	hours	200	

		Time allowed	Maximum Marks
4.	Theory of Machines Machine design.		200
5.	Prime Movers .	. 3 bours	200
6.	Viva Voce	i	300
II.	Optional subjects (	any two to be	offered)—
7.	Hydraulics and Hydr Machines.	esulie 8 hours	100
8.	Electrical Engineering	. 3 hours	100
Đ,	Metallurgy	. 3 hours	100
10	Workshop Tech tology	3 hours	100
11.	Physics (including Electry & Magnetism).		100
12.	Workshop Organisation and Management.		100

2. The standard and syllabus of the examination will be such as the Commission shall prescribe and the Commission shall, it they think it desirable, determine what shall be the qualifying marks in all or any of the subjects of the examination.

If owing to the large number of candidates appearing, the Commission consider it impracticable to examine all candidates in viva voce, the Commission may, at their discretion, after the written marks have been compiled, summon for examination in viva voce only those candidates who have obtained in the written test the qualifying marks which may be prescribed by the Commission. No candidate will be considered to have qualified at the examination unless he/she obtains at least—

- (1) 40 per cent. of the total marks for the compulsory subjects, excluding vive voce, and
- (2) 35 per cent. of the total marks for the viva voce test.
- 3. From the marks assigned to candidates in each subject such deduction will be made as the Commission may consider necessary in order to secure that no credit is allowed for merely superficial knowledge.
- 4. If a candidate's handwriting is not easily legible a deduction will be made on this account from the total marks otherwise accruing to him/her.
- 5. Credit will be given for good English including orderly, effective and exact expression combined with due economy of words in all subjects of the examination and not only in subjects which are specially devoted to English.
- 6. Special attention will be paid in the viva voce test to assessing the candidate's capacity for leader-ship, initiative and intellectual curiosity, tact and other social qualities, mental and physical energy, powers of practical application and integrity of character.
  - 7. All question papers must be answered in English.

## APPENDIX V (A)

Standard and Syllabus of the Examination

Note.—The standard of papers in English and General Knowledge will be such as may be expected of an Engineering Graduate. The standard of papers in other subjects will approximate to that of an Engineering Degree Examination of an Indian University. There will be no practical examination in any of the subjects.

- 1. English.—An essay to be written in English on one of several specified subjects. Questions to test the understanding of and power to write English. Passages will usually be set for summary or presis.
- 2. General Knowledge.—Including knowledge of current events and of such matters of every day observation and experience in their scientific aspects as may be expected of an educated person who has not made a special study of any scientific subject. The paper will also include questions on Indian History and Geography of a rature which candidates should be able to answer without special study.
- 3. Applied Mechanics (including strength of Materials).—(a) Statics: Forces acting on a rigid body; moments of forces; composition and resolution of forces; friction; machines; efficiency; couples; conditions of equilibrium, with application to Simple framed structures and beams; bending-moment and shear-force diagrams for dead-loads.

- (b) Hydrostatics: Pressure at a point in a liquid; centre of pressure on an immersed plane area; equilibrium of floating bodies.
- (c) Kinematics (of Motion in a plane): Velocity and acceleration of a point; relative motion; acceleration of a point moving in a circular path with uniform speed; simple harmonic motion; velocity-ratio diagrams of simple mechanisms; instantaneous centre.
- (d) Kinetics: Force, mass, impulse, momentum, work, energy, power; moment of momentum, moment of inertia, their relations and measurements; conservation of energy; conservation of linear momentum; rectilinear motion of a body under a force (constant or variable) equation of motion of a particle; motion of a body in a circular path with uniform speed; balancing of rotating masses; rotation and oscillation of a body about a fixed axis.
- (e) Hydraulics: Pressure and velocity change along a streamline; Bernoulli's theorem; flow through an orifice.
- (f) Stress and Strain: Stress and strain in tension, compression, and shear; Hooke's law; Relations between elastic constants; combined stress in two dimensions; circle diagrams; compound bars in tension and compression; elementary consideration of stress due to temperature changes.
- (g) Bending moment and shearing force diagrams for live loads. Analysis of uniform and uniformly varying stress; clastic theory of bending of beams; bending and shear stresses in beams; Modulus of section and equivalent areas; maximum and minimum stresses in a joint due to eccentric loading; design of riveted joints and stresses in boiler shells; welded joints.
- (h) Cylinders: Thin cylindrical and spherical shells under internal pressure; stresses in thick-walled cylinders under internal and external pressure; force and shrink fits.
- (i) Torsion: Torsion of round bars; transmission of power by shafts.
- (j) Combined Stresses: Combined bending and direct stress, and combined bending and torston.
- (k) Strain Energy: Work done in elastic deformation; Stresses due to suddenly applied loads.
- (1) Springs: Laminated springs and close-coiled helical springs.
- (m) Struts: Elementary theory of struts with use of empirical formulae.
- empirical formulae.

  (n) Property of materials: The mechanical properties of materials; composition and properties of the important metals used by engineers; effects of heat treatment, annealing and normalizing: effect of cold work on the properties of metals: elasticity, plasticity, ductility, tenacity, hardness, resistance to shock: resistance to repeated and alternating stress; effect of form and surface conditions; failure under combined stress; creep at high temperatures; considerations affecting the choice of the safe working stress in design.
  - 4. Theory of Machines and Machine Design-

Kinematics.—Methods of determining the relative velocities of parts in machines, by calculation and by graphic methods. Simple cases of acceleration diagrams.

Cams.—Harmonic, constant-velocity, and constant acceleration types; displacement, velocity and acceleration of follower.

Gears, Gearing.—Theory of shape and action of teeth; simple, compound and epicyclic trains. Worm gears. Strength and durability of teeth. Engine turning moment diagrams; fly-wheels; governors.

Balancing.—Rotating parts; primary balancing of reciprocating parts, including locomotive balancing and secondary balancing of 'in line' engines.

Vibrations.—Body with single degree of freedom: torsional oscillations of shafts with attached masses. Whirling of shafts.

Gyroscope.—Theory and action. Tractive effort and performance curves for vehicles. Friction and Lubrication; 'Dry' friction: friction circle, friction clutches, screws, colar friction. Belt and rope drives.

Analysis of forces in simple mechanisms. Design of parts subjects to pure bending or pure torsion, e.g. pin connections; levers; shafting; springs. Simple clutches and flexible joints in shafting.

Design of parts subjected to combined bending torsion and direct stress, e.g. cranked members; eccentrically loaded connections (bolted and riveted).

Design involving applications of kinematics e.g. gears and gear wheels; nut and crew mechanisms; cams; lubrication; design of bearings for given loads; use of ball and roller journal and thrust bearings; influence on design of fatigue and stress concentrations.

Design of belts, ropes, pulleys, flywheels, thin and thick pipes.

Note.—Candidates will be expected to show competency in making dimensioned hand sketches in good proportion. Drawing instruments may be used.

#### 5. Prime Movers-

Fuel, Gas Plants and Boilers .-

- (a) Fuel.—Coal, wood, petroleum, gas, petrol, alcohol, etc., physical characteristics, approximate chemical composition, heat of combustion.
- (b) Gas Plants.—Gas producers; pressure. and suction plants, arrangements and working.
- (c) Boilers.—Draught; natural, forced and induced. Ordinary forms of stationery, locomotive, marine, water-tube, and other types; heating surface, fire-grate area; boiler efficiency; superheaters; feed-water heaters; accessories and management.

#### Theory of Heat Engines .--

- (a) Thermodynamical principles; Carnot's cycle; perfect heat engine second law.
- (b) Air Engines.—Stirling and other forms.
- (c) Internal Combustion Engines,—Gas, oil and petrol engines; types and working; features of cycles. Proportioning of mixtures; efficiencies.
- (d) Steam.—Thermodynamics of the generation, expansion and condensation of steam heatdiagrams, etc.
- (e) Steam engines and turbines, with special references to modern developments.
- (f) Refrigerating Plants.—Theory and general arrangement of the more common types.
- (g) Air Compressors,—Theory of pneumatic working.

#### Generating Plants, Accessories and Details .-

- (a) General arrangements and construction of the more important types.
- (b) Condensers, air-pumps, circulating pumps, cooling tanks, etc.
- (c) Carburettors and systems of ignition.
- (d) Cylinders, pistons, cross-heads, guides, connecting rods, cranks, governors, fly-wheels, valves and valve-gears, glands and pipes.
- (c) Engine Testing.—Consumption of steam and fuel, gas, and oil; brakes, and dynamo-meters, indicators and indicator diagrams.
- 6. Viva-Voce.—The candidate will be interviewed by a Board who will have before them a record of his/her career. He/she will be asked questions on matters of general interest. The object of the interview is to assess his/her suitability for the Service for which he/she is entered, and in framing their assessment the Board will attach particular importance to his/her intelligence and alertness, his/her vigour and strength of character and his/her potential qualities of leadership.
  - 7. Hydraulics and Hydraulic Machines-

Hydraulics.—Definitions relating to flow of water stream-line motion. Bernoulli's theorem. Venturimeter.

Flow of water through small and large orifices; drowned orifices; sudden enlargements and contractions in flow of water. Time of emptying tanks. Flood absorptive capacity of tanks.

Flow of water over notches and weirs.

Flow of water through pipes; hydraulic gradients; losses of head due to bends, contraction and sudden enlargements; losses of head through siphons. Impacts at bends and thrust blocks.

Flow of water in open channels and in pipe; Chezy, Basin. Kutters and other formulae and their applications; cross sections of greatest efficiency.

Calculations of afflux and back water curve.

Gauging the flow of water in open channels; water-meters.

Hydraulics and hydrostatics of weirs and other canal works.

Hydrokinetics; uniform and steady flow streamline and turbulent motion. Bernoulli's theorem and its application.

Discharge through orifices and mouth pieces, and over notches and weirs. Variable heads. Laws of fluid friction. Head lost due to friction.

Hydraulic Machinery.—Impact of water on fixed and moving vanes. Turbines; impulse and reaction. Description of different types of turbines. Determination of vaneangles. Efficiencies of turbine plant. Governing.

Pumps.—Reciprocating, centrifugal and turbine.

#### 6. Lieutrical Engineering-

Direct Current.—Principles of generators and motors. Types and characteristics. Starting and controlling appliances. Methods of testing of generators and motors. Operation in parallel of direct current generators. Types and general features of primary batteries. Testing of primary batteries. Types and testing of storage batteries. Method of charging. Boosters and other auxiliary appliances.

Alternating Currents.—Production of alternating currents. Frequency and wave shape Graphic representation of current, voltage and power in A. C. Circuits. Maximum and "R.M.S. Value" of simple sine wave. Effect of resistance inductance and capacity in A. C. circuit. Power and power factor in A. C. circuit. Single phase and poly-phase currents. Connections of poly-phase systems. Power measurement in poly-phase circuits. Theory of alternator and its regulation. Parallel running. Theory of transformer. Transmission of poly-phase currents. Synchronous motors and Induction motors. Methods of starting. Efficiency and characteristics. Circle diagrams and testing of motors. Improvement of power factor. Motor converter and rotary converter and methods of starting of rotary converter. Principle of automatic voltage regulator.

Electrical Instruments and Measurements.—Principles of construction and theory of measuring instruments for direct and alternating currents. Commercial types. Calibrations of instruments. Measurements of resistances. Ohm-Meters. Types of bridges for measuring resistances. Potentio meter. Phase and frequency meters. Synchronoscope. Types of watt-meter

Transmission and Distribution of Electrical Energy.—
Systems of supply. Economic voltage and size of conductor. Formulae for determination of size of conductor for standard systems of distribution, the foad, voltage etc., being given. Factors influencing voltage drop in D. C. and A. C. transmission lines. Influence of power factor of the load on voltage regulation of a transmission line. Standard equipment on generator and motor control panels for different types of D. C. and A. C. generators and motors.

#### 9. Metallurgy-

Elementary consideration of the structure of metals. Crystals. grains, grain boundaries; Construction and interpretation of thermal equilibrium diagrams.

Structure of alloys; eutectics; solid solutions; intermetallic compounds—critical points in straight carbon

Mechanical properties and their assessment. Standard methods of testing Elementary effects of mechanical work on structure and physical properties. Fatigue. Creep. Corrosion. Plastic properties.

Iron and steel-

Methods of manufacture; brief outline of pig iron manufacture. The different types of pig iron and their uses; haematite, basic, foundry cold-blast. Wrought iron. Steel-making regarded as a chemical process. Outline of crucible, Bessemer, open-hearth, and electrical furnace practice. Relationship between process of manufacture and specific properties.

Effects of common elements of carbon steel. British Standard Specification for plain carbon steels. Structure of steel ingots as cast. Effects of hot and cold deformation on the structure and mechanical properties of steel. Effects of alloy elements. The common alloy steels. High-speed steels. Classification of straightcarbon and alloy steels according to their uses.

Cast iron. Malleable cast iron. Moulding. Influence of design and section thickness on the structure of iron and steel castings.

Machinability of ferrous metals as affected by composition and treatment.

## Non-ferrous metals—

A study of the uses, physical, and mechanical properties of the principal non-ferrous alloys of industrial importance, with special reference to standard specifications. Hot and cold working Alloys suitable for discasting. Bearing metals. Relationship between structure and duty.

Heat Treatment of Metals.

General industrial pyrometry.

Normalizing, annealing, quenching, and tempering of plain carbon steels—effects of microstructure and mechanical properties. Case-hardening and nitriding. Temper—brittleness, mass effect, strain-ageing.

Grain growth and recrystallisation, ageing. Heat treatment plant and equipment. Technology of Working Processes-

- (a) Hot stamping and forging. Variation in procedure for different materials. Effect on physical properties and structure. Flow of metal during process. Correct and incorrect fibre direction; evidence of macro-section.
- (b) Press work. Suitability of materials. Drawing operations of varying depths and metal flow. Interstage annealing. Material inspection at various stages.
- (c) Welding. The effect of electric arc and oxyacetylene processes on materials. Electrodes and fluxes. Structure of welds. Inspection of welds.
- (d) Extrusion. Materials available. Type of work possible.

## 16. Workshop Technology-

Material.—The composition, physical property and engineering uses of the more common metals, their alloys such as cast iron, malleable iron, mild steel, medium carbon steel, phosphor bronze and light alloys etc.

Tool steels, carbon and high-speed steels and their suitability for different kinds of tools.

Heat Treatment.—The relation between the heat-treatment and the physical property of plain carbon steels.

The effect of Carbon.—Critical temperatures, Hardening tempering, annealing, normalizing and case hardening. Types of furnaces, Temperature measurement and Castrol Quenching media.

Manufacturing Process.—An outline of the preparatory processes for forming materials, e.g. moulding and casting forgings; drop stamping, rolling and drawing metal bars. Dishing, drawing, pressing and extruding; brazing and soldering, welding by Arc, and welding and cutting by sectylene gas blow pipe flame.

Measuring, Gauging and Inspection.—General principle of interchangeable production and limit gauging.

Standards.—Systems of limits and fits for plain and acrewed work. Tolerances, limits; clearance, interference. Tolerances, associated with different machining operations.

Types of Limit Gauges.—Advantages of adjustable gauges,

Measuring equipment.—Use of surface plates, squares, micrometers vernier calipers and height gauges, dial gauges, rules, protractors. Conversion factor. Standard workshop gauges, their accuracies and uses.

Cutting Tools.—Cutting action of tools such as hand tools, lathe tools, drills, reamers, milling cutters, dies taps etc. Angles of tools for cutting different materials and purposes. Measurement of tool angles. Cutting speeds and feeds. Estimating machining times.

Machine Tools.—Fundamental principles in the production of machine surfaces. Principal features of construction and function of general purpose machines, such as lathes, sensitive drills, radial and vertical drilling machines, shaping, slotting, plaining and boring machines; plain milling machine, capstan and turret lathes, grinding and lapping machines.

Lubrication.—Types and uses of cutting solutions. Selection and methods of application.

Operation Planning.—Planning the operation layout for production and estimation of floor to floor times for machined parts.

## 11. Physics including Electricity and Magnetism-

Heat.—The methods of calorimetry and thermometry, Vapor-pressures, critical temperature and preasure. Conduction and diffusion of heat and the determination of constants. Radiation and absorption; laws of cooling. Theory of exchanges; methods of measuring radiation, Laws of thormodynamics; simple applications.

Light.—Velocity of light. Illumination; photometry. Achromatism in lens system; direct-vision spectroscope.

The wave theory; simple interference phenomena, Huygen's principle, explanation of straight line propagation, reflexion, and refraction of light. Action of mirror, lenses, etc. reviewed from this standpoint. Simple diffraction phenomena, Gratings, and wavelengths determination. Spectrum analyses; Doppler's principle. Double refraction and polarization of light; ratatory polarization; simple application.

Magnetism.—Forces on a magnet in a magnetic field. Determination of axes and moment of magnet. Magnetic potential, level surfaces. Interaction of two short magnets: determination of field strength. Magnetic shell: its potential energy in magnetic field. Total normal induction. Gauss' theorem: number of lines of force. Magnetic induction in iron, etc. Theory of magnetism.

The magnetic field of the earth; the elements and their variations; the compass and its corrections.

Electricity.—Electric capacity; specific inductive capacity, Distribution of electricity on surface of conductors; images. Value of electric force in simple cases of distribution. The mechanical force on charged conductors; energy of electrified systems. The dielectric medium dielectric diplacement currents.

Wheatstone's bridge; specific resistance; resistance thermometers. Conductivity of electrolytes; ionization; migration phenomena; accumulators. Standard cells; the potentiometer system of measurement. Thermoelectricity, application of thermo-dynamics; thermoelectric diagrams. Electro-magnetic induction; coefficients of induction; induction coils. Energy of circuit carrying current when placed in a magnetic field; mechanical force on conductors carrying current; moving coil instruments. Lenz's law; illustration from dynamos and motors, etc. Determination of current resistance; E.M.F. in absolute measure. The discharge of a condenser; electric waves. Elementary theory of the electron.

The elementary theory of the continuous current dynamo and motor and of the alternating current dynamo. General principles of the application of electricity to lighting power, transmission, telegraphy, etc.

Sound.—The transmission of energy through material media by wave-motion; speed of propagation of waves of permanent type. Nature of musical sounds; pitch; scales. Reflection and refraction of sound; influence of wave-length. The vibration of strings, bars, plates and gas columns, resonance. Interference and diffraction phenomena. Analysis of sound. Measurement of wavelength, velocity and pitch.

12. Workshop Organisation and Management-

Factory Organisation.—Essentials for a sound system of works organisation. Division of managerial duties, Costs Section, Administrative Division, Technical Division, Works Manager's departments.

Place of the Foreman in Works Organisation.—Choice of Foreman; duties of foreman; maintenance of discipline, supervision and instructions. Attitude towards workers; care of materials, tools and equipment, analytical study of machines, men and methods; records maintenance; bonus to foreman.

Workers and Working conditions.—The problem of incentives, fair and adequate wages, satisfactory working conditions, fair and sympathetic treatment. Suggestions from employees; day wage system; piece work system, premium or bonus system; profit sharing scheme; what is a fair day's wage; higher wages must result in greater output. Problem of factory discipline; proper time keeping; check on absenteeism; check on lottering. Workers rules and regulations. Efficiency records. Works Committees. Duties and responsibilities of employers and labour. Labour relations.

Stores Organisation.—Functions of the Stores Department. Efficient handling and control of stores. Material issue requisitions; record of material issued. Bin cards; Stores record cards; Duties of Stores Accountants; materials returned from job. Advantages of good store keeping and store recording.

Labour Organisation.—Training of employees, recording of time and performance; time recording metal discs; Mechanical time recorder; job cards, piece work cards, piece work rules; overtime slips; pass out slips; preparation of wages sheets and payment of wages for overtime; transfer from one department to another; fines; Works Committees.

Method of remunerating Labour.—Time and day rate system; piece work method; combination of day rate and piece work; bonus methods; high wage plan; collective bonus plans; profit sharing scheme; essential factors for wages as an incentive to efficiency.

Production Organisation.—The Works Planning Department and Progress Department, estimating department; inspection departments and duties of inspection department. Budgetary control; statistical reports; standardisation and mass production; internal transport; tool service, maintenance service, drawing and design service.

Labour Welfare.—Labour welfare activities; hours of work and adequate wages; accident, safety protections; Shop cleanliness and sanitation; lighting and ventilation; factory discontent; transport to and from factory; educational facilities; canteen and mess facilities; medical aid; amenities for sports and games; works library.

Maintenance of rigid discipline-

Cost Accounting and Cost Control.—Main elements of costs; material labour expenses; items usually included in work on cost; office on cost; duties of the cost office; ascertaining of prime cost of articles; methods of record

and internal check. Work orders; stock orders; pending orders; charging direct materials cost; material issue requisitions; return of materials to stores; transfer of materials from one job to another; material issue, wages. etc.; detailed consideration of oncost items. Allocation and distribution of expenses; method of recording works. expenses in cost and cost records.

## APPENDIX VI

Candidates must pay the following fees:-

A. To the Commission-

A consolidated application and examination fee of Rs. 82-8-0 (Rs. 20-10-0 in the case of candidates belonging to the Scheduled castes or Scheduled tribes) with the application.

Only a treasury receipt or crossed Indian postal orders for this amount will be accepted by the Commission. The Commission cannot accept the fee in cash or by cheque.

Note.—The Commission may, at their discretion, remit the prescribed fee where, they are satisfied that the applicant is a bona fide displaced person and is not in a position to pay the prescribed fee.

B. To the General Manager, of the Railway concerned—Rs. 16 before examination by a Medical Board (only for candidates being considered for appointment).

No claim for a refund of these fees will ordinarily beentertained nor can they be held in reserve for any other examination or selection.

A refund of Rs. 75 (Rs. 18-12-0 in the case of a candidate belonging to the Scheduled Castes or Scheduled Tribes) will, however, be allowed to a candidate who has paid the consolidated fee of Rs. 82-8-0 (Rs. 20-10-0 in the case of candidates belonging to the Scheduled Castes or Scheduled Tribes) but who is not admitted to the examination by the Commission.

#### APPENDIX VII

PARTICULARS REGARDING THE MECHANICAL ENGINEERING AND TRANSPORTATION (POWER) DEPARTMENT OF THE SUPERIOR REVENUE ESTABLISHMENT OF INDIAN RAIL-WAYS

(The arrangements and salaries héreinafter described are subject to revision according to the requirements of the service.)

1. Candidates selected for appointment under Rule 3(2) will be appointed as probationary officers for a period of three years during which their services will be liable to termination on three months' notice on either side. They shall undergo practical training for the first two years. Those favourably reported upon at the end of the two years' training and who have passed any departmental examination or examinations that may be prescribed will be given charge of a working post during the third year of their probationary period. At the end of this period, they will be required to pass a final practical departmental examination and will, if successful, be confirmed in the Mechanical Engineering and Transportation (Power) Department, provided they are considered fit for permanent appointment. On confirmation their agreement will be continued subject to their service being terminable on six months' notice on either side.

Note.—The period of training and the period of probation against a working post may be modified at the discretion of Government.

- 2. Probationers recruited under rule 3(1) or 3(2) will be required to pass a language examination in Urdu or Hindi by the lower standard, modified to suit the requirements of the Railways before they can be confirmed, or before their pay can be raised from Rs. 350 to Rs. 380 in the time scale during the period of their probation. Probationers who can read, write and speak in Urdu or Hindi, may be exempted by the General Manager from passing the language examination. Failure to pass the examination within the probationary period involves liability to removal from service.
- 3. Officers of the Mechanical Engineering and Transportation (Power) Department recruited under these regulations will not be entitled to pension on quitting the service, but will be eligible throughout their service for the benefits of the State Railway Provident Fund, to which they will be required to subscribe, and by the rules of which Fund they will be required to abide.
- 4. Pay will commence from the date of joining service as a probationer. Service for increments will also count from the same date. Particulars as to pay are contained in para. 8 of this Appendix.

- 5. Officers recruited under these regulations shall be eligible for leave in accordance with the rules for the time being in force applicable to officers of Indian Railways.
- 6. Officers will ordinarily be employed throughout their service on the Railway to which they may be posted on first appointment and will have no claim, as a matter of right, to transfer to some other Railway but the Government of India reserve the right to transfer such officers, in the exigencies of service, to any other Railway or project in or out of India. Officers will be liable to serve in the Stores Department of Indian Railways if and when called upon to do so.
- 7. The relative seniority of officers recruited under rule 3(1) will ordinarily be determined by the order of merit at the end of their first four years' training, while in the case of those recruited under rule 3(2), the relative seniority will ordinarily be determined by the order of merit in the competitive examination. As between officers recruited under rule 3(1) and those recruited under rule 3(2) who enter working posts in the same year the seniority will be interpolated. The Government of India, however, reserve the right of fixing seniority at their discretion in individual cases. They also reserve the right of assigning to officers appointed under regulation 3(3) and 3(4) positions in the seniority list at their discretion.
- 8. The following are the rates of pay admissible to officers appointed to Mechanical Engineering and Transportation (Power) Department:—
  - Junior Scale:—Rs. 350—350—380—380—30—590— EB—30—770—40—850.
  - Senior Scale:—Rs. 600 (1st to 6th year)—40—1,000—1,000—1,050—1,050—1,100—1,100—1,150.
  - Junior Administrative Grade: -Rs. 1,300-60-1,600.
  - Senior Administrative Grade: Under consideration.

Nore.—Probationary officers will start on the minimum of the Junior Scale and will count their service for increments from the date of joining. They will, however, be required to pass any departmental examination or examinations that may be prescribed before their pay can be raised from Rs. 350 p. m. to Rs. 380 p. m. in the time scale.

- 9. The increments will be given for approved service only, and in accordance with the rules of the Department.
- 10. Promotions to the Administrative grades are dependent on the occurrence of vacancies in the sanctioned establishment and are made wholly by selection; mere seniority is considered to confer no claim for promotion.

P. N. SAXENA, Director, Railway Board.

## MINISTRY OF TRANSPORT

## RESOLUTION

## PORTS

New Delhi, the 19th May 1951

No. 18-P(4)/50.—In partial modification of the Ministry of Transport Resolution No. 19-P(148)/49, dated the 14th August 1950, the Government of India

have decided that the composition of the National Harbour Board shall be as follows:—

#### Chairman

- (1) Hon'ble Minister for Transport. Vice-Chairman
- (ii) Hon'ble Minister of State for Transport.

#### Members

- (fii) Hon'ble Minister for Public Works, Government of Madras.
- (iv) Hon'ble Minister for Public Works and Housing, Government of Bombay.
- (v) Hon'ble Minister for Irrigation and Waterways, Government of West Bengal.
- (vi) Hon'ble Minister for Commerce, Government of Orissa.
- (vii) Hon'ble Minister for Communications, Government of Saurashtra.
- (viii) Hon'ble the Chief Minister, Government of Travancore-Cochin.
- (ix) Secretary to the Government of India, Ministry of Transport.
- (x) A representative of the Ministry of Railways.
- (xi) Secretary to the Government of India, Ministry of Communications or his nominee.
- (xii) Secretary to the Government of India, Ministry of Commerce and Industry or his nominee.
- (xiii) Secretary to the Government of India, Ministry of Defence (assisted by the Chief of the General Staff, A.H.Q., and Director of Naval Plans, N.H.Q.).
- (xiv) A representative of the Ministry of Finance, Government of India.
- (xv) The Chief Commissioner, Kutch or his representative.
- (xvi) The General Manager, B.N. Railway.
- (xvii) The Chairman of the Commissioners for the Port of Calcutta.
- (xviii) The Chairman, Bombay Port Trust.
- (xix) The Chairman, Madras Port Trust.
- (xx) The Administrative Officer, Cochin Harbour.
- (xxi) The Development Commissioner, Kandla.
- (xxii) Shri M. A. Master, Bombay, Representative of Trade and Industry.
- (xxili) Shri S. N. Haji, Bombay, Representative of Shipping.
- (xxiv) Shri Tulsidas Mulji Vishram, Bombay. Representative of Country Craft.
- (xxv) Shri A. C. Banerjee, Calcutta, Representative of Labour.

Y. N. SUKTHANKAR, Secy.